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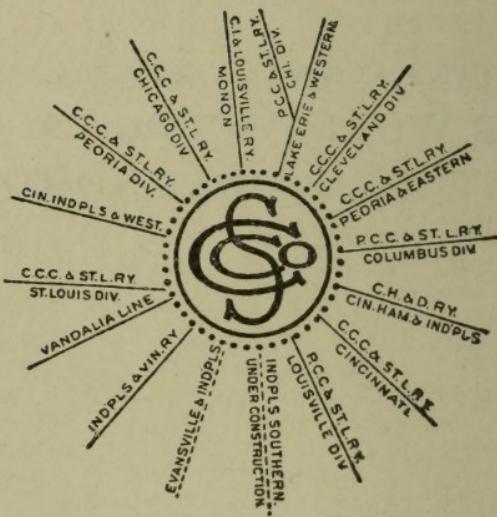
DEALERS IN

STEAM, GAS AND WATER SUPPLIES

PIPE FITTINGS AND VALVES, MILL AND
WATER WORKS SUPPLIES, HOUSE
HEATING GOODS AND TOOLS

CATALOGUE B

INDIANAPOLIS, INDIANA
209-217 WEST WASHINGTON ST.



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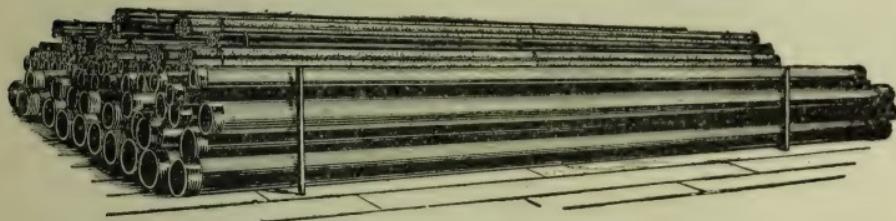
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STANDARD STEAM, GAS, AND WATER PIPE**BLACK AND GALVANIZED**

B1

| Size, Inches | Price Black or Galvanized per Foot | Actual Outside Diameter, Inches | Thickness. Inches | Nominal Weight per Foot, Pounds | Number of Threads per Inch of Screw |
|-----------------|---|--|----------------------|--|--|
| $\frac{1}{8}$ | .05 $\frac{1}{2}$ | .40 | .068 | .24 | 27 |
| $\frac{1}{4}$ | .05 $\frac{1}{2}$ | .54 | .088 | .42 | 18 |
| $\frac{3}{8}$ | .05 $\frac{1}{2}$ | .67 | .091 | .56 | 18 |
| $\frac{1}{2}$ | .08 $\frac{1}{2}$ | .84 | .109 | .84 | 14 |
| $\frac{3}{4}$ | .11 $\frac{1}{2}$ | 1.05 | .113 | 1.12 | 14 |
| 1 | .16 $\frac{1}{2}$ | 1.31 | .134 | 1.67 | 11 $\frac{1}{2}$ |
| 1 $\frac{1}{4}$ | .22 $\frac{1}{2}$ | 1.66 | .140 | 2.24 | 11 $\frac{1}{2}$ |
| 1 $\frac{1}{2}$ | .27 | 1.90 | .145 | 2.68 | 11 $\frac{1}{2}$ |
| 2 | .36 | 2.37 | .154 | 3.61 | 11 $\frac{1}{2}$ |
| 2 $\frac{1}{2}$ | .57 $\frac{1}{2}$ | 2.87 | .204 | 5.74 | 8 |
| 3 | .75 $\frac{1}{2}$ | 3.50 | .217 | 7.54 | 8 |
| 3 $\frac{1}{2}$ | .95 | 4.00 | .226 | 9.00 | 8 |
| 4 | 1.08 | 4.50 | .237 | 10.66 | 8 |
| 4 $\frac{1}{2}$ | 1.30 | 5.00 | .246 | 12.49 | 8 |
| 5 | 1.45 | 5.56 | .259 | 14.50 | 8 |
| 6 | 1.88 | 6.62 | .280 | 18.76 | 8 |
| 7 | 2.35 | 7.62 | .301 | 23.27 | 8 |
| 8 | 2.82 | 8.62 | .322 | 28.18 | 8 |
| 9 | 3.40 | 9.62 | .344 | 33.70 | 8 |
| 10 | 4.25 | 10.75 | .366 | 40.00 | 8 |
| 11 | 4.75 | 11.75 | .375 | 45.00 | 8 |
| 12 | 5.20 | 12.75 | .375 | 49.00 | 8 |

Unless otherwise ordered, black pipe, random lengths, with threads and couplings, will be shipped.

For cut lengths, an extra charge will be made above random lengths.

For pipe smoothed on the inside, known as plugged and reamed, an extra charge will be made above regular pipe.

For galvanized pipe, an extra charge will be made above black.

For asphalted pipe, an extra charge will be made above black.

Diagrams Showing Approximate Thickness and Diameters of $\frac{3}{4}$ -Inch Pipe
STANDARD**EXTRA HEAVY****DOUBLE EXTRA HEAVY**

It will be seen by above that the actual outside diameter of Standard, Extra Heavy and Double Extra Heavy pipe is the same—the extra thickness of metal reducing the internal diameter—so that the same sizes of dies and fittings fit either thickness of pipe.

Lists on this page adopted February 15, 1900.

LARGE OUTSIDE DIAMETER PIPE.—Plain Ends—Per Foot

| O. D. In. | $\frac{1}{4}$ Inch Thick | $\frac{5}{8}$ Inch Thick | $\frac{3}{4}$ Inch Thick | $\frac{7}{8}$ Inch Thick | $\frac{1}{2}$ Inch Thick | O. D. In. | $\frac{5}{8}$ Inch Thick | $\frac{3}{4}$ Inch Thick | $\frac{7}{8}$ Inch Thick | $\frac{1}{2}$ Inch Thick |
|--------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|--------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| 14 | 3.85 | 4.80 | 5.75 | 6.65 | 7.60 | 21 | 7.25 | 8.65 | 10.10 | 11.50 |
| 15 | 4.15 | 5.15 | 6.15 | 7.15 | 8.15 | 22 | 7.60 | 9.10 | 10.60 | 12.10 |
| 16 | 4.40 | 5.50 | 6.60 | 7.65 | 8.70 | 24 | ..... | 9.95 | 11.60 | 13.15 |
| 17 | 4.70 | 5.85 | 7.00 | 8.15 | 9.25 | 26 | ..... | 11.30 | 13.15 | 14.95 |
| 18 | 4.95 | 6.20 | 7.40 | 8.60 | 9.80 | 28 | ..... | 12.15 | 14.15 | 16.15 |
| 20 | 5.50 | 6.90 | 8.25 | 9.60 | 10.95 | 30 | ..... | ..... | 15.20 | 17.65 |

O. D. Pipe shipped in random lengths, plain ends unless otherwise ordered. Extra charge for threading.

EXTRA STRONG WROUGHT PIPE

| Size..... | inches | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 |
|------------------------------|----------|---------------|---------------|---------------|---------------|---------------|-------|
| Price..... | per foot | .11 | .11 | .11 | .12 | .15 | .22 |
| Actual Outside Diameter..... | inches | .405 | .540 | .675 | .840 | 1.05 | 1.315 |
| Nominal Inside Diameter..... | " | .205 | .294 | .421 | .542 | .736 | .951 |
| Thickness..... | " | .1 | .123 | .127 | .149 | .157 | .182 |
| Nominal Weight per foot.... | pounds | .29 | .54 | .74 | 1.09 | 1.39 | 2.77 |

| Size..... | inches | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{4}$ | 3 | $3\frac{1}{2}$ |
|------------------------------|----------|----------------|----------------|-------|----------------|-------|----------------|
| Price..... | per foot | .3 | .36 | .50 | .81 | 1.05 | 1.33 |
| Actual Outside Diameter..... | inches | 1.66 | 1.9 | 2.375 | 2.875 | 3.5 | 4. |
| Nominal Inside Diameter..... | " | 1.272 | 1.494 | 1.933 | 2.315 | 2.892 | 3.358 |
| Thickness..... | " | .194 | .203 | .221 | .28 | .304 | .321 |
| Nominal Weight per foot.... | pounds | 3. | 3.63 | 5.02 | 7.67 | 10.25 | 12.47 |

| Size..... | inches | 4 | $4\frac{1}{2}$ | 5 | 6 | 7 | 8 |
|------------------------------|----------|-------|----------------|-------|-------|-------|-------|
| Price..... | per foot | 1.5 | 1.95 | 2.16 | 2.90 | 3.80 | 4.30 |
| Actual Outside Diameter..... | inches | 4.5 | 5. | 5.563 | 6.625 | 7.625 | 8.625 |
| Nominal Inside Diameter..... | " | 3.818 | 4.28 | 4.813 | 5.75 | 6.625 | 7.625 |
| Thickness..... | " | .341 | .36 | .375 | .437 | .5 | .5 |
| Nominal Weight per foot.... | pounds | 14.97 | 18.22 | 20.54 | 28.58 | 37.67 | 43. |

DOUBLE EXTRA STRONG WROUGHT PIPE

| Size..... | inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ |
|------------------------------|----------|---------------|---------------|-------|----------------|----------------|
| Price..... | per foot | .25 | .30 | .37 | .52 | .65 |
| Actual Outside Diameter.... | inches | .84 | 1.05 | 1.315 | 1.66 | 1.9 |
| Nominal Inside Diameter..... | " | .244 | .422 | .587 | .885 | 1.088 |
| Thickness..... | " | .298 | .314 | .364 | .388 | .406 |
| Nominal Weight per foot.... | pounds | 1.7 | 2.44 | 3.65 | 5.2 | 6.4 |

| Size..... | inches | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 |
|------------------------------|----------|-------|----------------|-------|----------------|-------|
| Price..... | per foot | .95 | 1.37 | 1.92 | 2.45 | 2.85 |
| Actual Outside Diameter.... | inches | 2.375 | 2.875 | 3.5 | 4. | 4.5 |
| Nominal Inside Diameter..... | " | 1.491 | 1.755 | 2.284 | 2.716 | 3.136 |
| Thickness..... | " | .442 | .56 | .608 | .642 | .682 |
| Nominal Weight per foot.... | pounds | 9.02 | 13.68 | 18.56 | 22.75 | 27.48 |

| Size..... | inches | $4\frac{1}{2}$ | 5 | 6 | 7 | 8 |
|------------------------------|----------|----------------|-------|-------|-------|-------|
| Price..... | per foot | 3.30 | 3.80 | 5.30 | 6.25 | 7.20 |
| Actual Outside Diameter.... | inches | 5. | 5.563 | 6.625 | 7.625 | 8.625 |
| Nominal Inside Diameter..... | " | 3.564 | 4.063 | 4.875 | 5.875 | 6.875 |
| Thickness..... | " | .718 | .75 | .875 | .875 | .875 |
| Nominal Weight per foot.... | pounds | 32.53 | 38.12 | 53.11 | 62.38 | 71.62 |

Extra Strong and Double Extra Strong will be shipped in random lengths and plain ends, unless otherwise ordered.

For pipe fitted with threads and couplings an extra charge will be made above regular.

For cut lengths an extra charge will be made above random. Also charge for labor cutting.

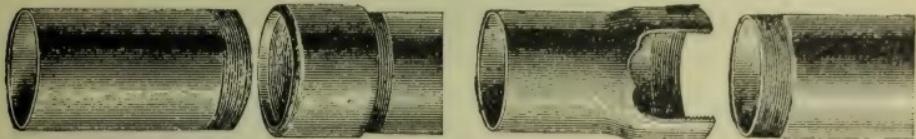
For galvanized or asphalted an extra charge will be made above black.

Extra heavy or hydraulic tubes, away from standard, special prices given on application.

LAP-WELDED FINE THREAD CASING

SCREW AND SOCKET

†INSERTED JOINT



B2 List adopted Feb. 15, 1900.

B3

| Nom. Inside Diam. Inches | Actual O'tside Diam. Inches | Price per Foot | Nom. Weight per Ft. Pounds | No. Th'ds. per In. Screw | Nom. Inside Diam. Inches | Actual O'tside Diam. Inches | Price per Foot | Nom. Weight per Ft. Pounds | Number Threads per Inch Screw |
|-----------------------------------|--------------------------------------|----------------------|-------------------------------------|-----------------------------------|-----------------------------------|--------------------------------------|----------------------|-------------------------------------|--|
| 2 | 2 $\frac{1}{4}$ | .23 | 2.22 | 14 | 5 $\frac{5}{8}$ | 6 | 1.05 | 10.46 | 14 |
| 2 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | .29 | 2.82 | 14 | 5 $\frac{5}{8}$ | 6 | 1.20 | 12.04 | 11 $\frac{1}{2}$ |
| 2 $\frac{1}{2}$ | 2 $\frac{3}{4}$ | .32 | 3.13 | 14 | 5 $\frac{5}{8}$ | 6 | 1.40 | 14.20 | 11 $\frac{1}{2}$ |
| 2 $\frac{3}{4}$ | 3 | .35 | 3.45 | 14 | 5 $\frac{5}{8}$ | 6 | 1.60 | 16.70 | 11 $\frac{1}{2}$ |
| 3 | 3 $\frac{1}{4}$ | .41 | 4.10 | 14 | 6 $\frac{1}{4}$ | 6 $\frac{5}{8}$ | 1.16 | 11.58 | 14 |
| 3 $\frac{1}{4}$ | 3 $\frac{1}{2}$ | .45 | 4.45 | 14 | 6 $\frac{1}{4}$ | 6 $\frac{5}{8}$ | 1.35 | 13.32 | 14* |
| 3 $\frac{1}{2}$ | 3 $\frac{3}{4}$ | .48 | 4.78 | 14 | 6 $\frac{1}{4}$ | 6 $\frac{5}{8}$ | 1.70 | 17.02 | 11 $\frac{1}{2}$ |
| 3 $\frac{3}{4}$ | 4 | .56 | 5.56 | 14 | 6 $\frac{5}{8}$ | 7 | 1.24 | 12.34 | 14 |
| 4 | 4 $\frac{1}{4}$ | .60 | 6.00 | 14 | 6 $\frac{5}{8}$ | 7 | 1.75 | 17.51 | 10* |
| 4 $\frac{1}{4}$ | 4 $\frac{1}{2}$ | .64 | 6.36 | 14 | 7 $\frac{1}{4}$ | 7 $\frac{5}{8}$ | 1.36 | 13.55 | 14 |
| 4 $\frac{1}{2}$ | 4 $\frac{1}{2}$ | 1.00 | 9.38 | 14 | 7 $\frac{5}{8}$ | 8 | 1.55 | 15.41 | 11 $\frac{1}{2}$ |
| 4 $\frac{1}{2}$ | 4 $\frac{3}{4}$ | .68 | 6.73 | 14 | 7 $\frac{5}{8}$ | 8 | 2.10 | 20.17 | 11 $\frac{1}{2}$ |
| 4 $\frac{3}{4}$ | 4 $\frac{3}{4}$ | 1.00 | 9.39 | 14 | 8 $\frac{1}{4}$ | 8 $\frac{5}{8}$ | 1.61 | 16.07 | 11 $\frac{1}{2}$ |
| 4 $\frac{3}{4}$ | 5 | .78 | 7.80 | 14 | 8 $\frac{1}{4}$ | 8 $\frac{5}{8}$ | 2.00 | 20.10 | 11 $\frac{1}{2}$ |
| 5 | 5 $\frac{1}{4}$ | .82 | 8.20 | 14 | 8 $\frac{1}{4}$ | 8 $\frac{5}{8}$ | 2.40 | 24.38 | 8* |
| 5 | 5 $\frac{1}{4}$ | 1.00 | 9.86 | 14 | 8 $\frac{5}{8}$ | 9 | 1.76 | 17.60 | 11 $\frac{1}{2}$ |
| 5 | 5 $\frac{1}{4}$ | 1.30 | 12.80 | 11 $\frac{1}{2}$ | 9 $\frac{5}{8}$ | 10 | 2.20 | 21.90 | 11 $\frac{1}{2}$ |
| 5 | 5 $\frac{1}{4}$ | 1.50 | 15.88 | 11 $\frac{1}{2}$ | 10 $\frac{5}{8}$ | 11 | 2.68 | 26.72 | 11 $\frac{1}{2}$ |
| 5 $\frac{1}{8}$ | 5 $\frac{1}{2}$ | .87 | 8.62 | 14 | 11 $\frac{5}{8}$ | 12 | 3.05 | 30.35 | 11 $\frac{1}{2}$ |
| 5 $\frac{1}{8}$ | 5 $\frac{1}{2}$ | 1.30 | 12.49 | 11 $\frac{1}{2}$ | 12 $\frac{5}{8}$ | 13 | 3.38 | 33.78 | 11 $\frac{1}{2}$ |

*Also made 11 $\frac{1}{2}$ thread. †Inserted Joint made to order.

STANDARD LAP-WELDED BOILER TUBES

List adopted February 15, 1900.

| O'tside Diam. Inches | Price per Foot | THICKNESS | | Nom. Weight per Ft. | O'tside Diam. Inches | Price per Foot | THICKNESS | | Nom. Weight per Ft. |
|----------------------------|----------------------|-----------|---------------------|---------------------------|----------------------------|----------------------|-----------|---------------------|---------------------------|
| | | Inches | Nearest B. W. G. | | | | Inches | Nearest B. W. G. | |
| 1 | .30 | .095 | 13 | .90 | 3 | .35 | .109 | 12 | 3.33 |
| 1 $\frac{1}{4}$ | .28 | .095 | 13 | 1.15 | 3 $\frac{1}{4}$ | .40 | .120 | 11 | 3.96 |
| 1 $\frac{1}{2}$ | .27 | .095 | 13 | 1.40 | 3 $\frac{1}{2}$ | .44 | .120 | 11 | 4.28 |
| 1 $\frac{1}{4}$ | .22 | .095 | 13 | 1.66 | 3 $\frac{3}{4}$ | .50 | .120 | 11 | 4.60 |
| 2 | .20 | .095 | 13 | 1.91 | 4 | .55 | .134 | 10 | 5.47 |
| 2 $\frac{1}{4}$ | .24 | .095 | 13 | 2.16 | 4 $\frac{1}{2}$ | .62 | .134 | 10 | 6.17 |
| 2 $\frac{1}{2}$ | .28 | .109 | 12 | 2.75 | 5 | .75 | .148 | 9 | 7.58 |
| 2 $\frac{3}{4}$ | .34 | .109 | 12 | 3.04 | 6 | 1.00 | .165 | 8 | 10.16 |

Above list price applies to both Steel and Charcoal Iron tubes.

Tubes 2 $\frac{1}{2}$ inch and smaller, over 18 feet long, are 10 per cent. higher price." 2 $\frac{3}{4}$ " " larger, " 22 " " " " " "

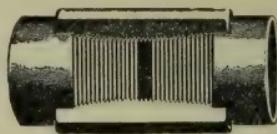
No deduction for tubes lighter than standard.

For extra wire gauge boiler tubes, away from standard not exceeding four wire gauges, one cent for each inch in diameter of tube for each additional gauge will be added to net price.

Tubes more than four wire gauges heavier than standard will be charged by the pound, the same as plain end stay tubes, arch pipes, and water grates.

COLD DRAWN SEAMLESS STEEL BOILER TUBES

are same list prices and dimensions as above.

DRIVE PIPE, LINE PIPE AND TUBING**B4**

For Gas, Oil and Water Wells, Quoted on Application

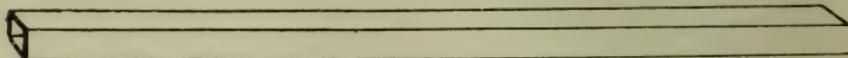
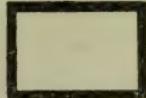
PLUGGED AND REAMED GALVANIZED PIPE

For Tubular Well Purposes

2, 2½, 3, 3½, and 4 inch sizes at approximately 10 per cent additional over price of regular Standard or Merchant Galvanized Pipe.

SPECIAL STEEL TUBING

Welded and Drawn

**B5 SQUARE****B6 RECTANGULAR****B7 ROUND**For use in machinery construction, etc. Prices on application.
State outside dimensions, thickness of metal and quantity wanted.**PIPE AND TUBE TRADE CUSTOMS**

Every piece of pipe, tubing, casing, boiler tubing, line pipe and drive pipe is carefully tested, but as it is impossible to always detect imperfections, the only guarantee that is given is to replace such goods as prove defective. Under no circumstances is the seller responsible for any damages beyond the price of the goods. No charges for labor or expenses required to repair defective goods or occasioned by them will be allowed. If the goods are defective, the measure of damages is the price of the defective pieces.

Claims for shortage or deductions for erroneous charges must be promptly presented or will not be allowed.

The outside diameter of goods heavier than "standard" is the same as standard, the extra thickness being on the inside, so that the different weights of the same size use the same coupling.

Special goods made to specification, where buyer is to inspect, must be inspected and accepted before shipment is made. After shipment is made our responsibility ceases.

SHELBY COLD DRAWN SEAMLESS STEEL TUBING

List adopted February 15, 1900.

Although the following list of prices does not cover tubes smaller than $\frac{3}{16}$ " O. D., we can furnish tubes as small as $\frac{1}{16}$ " O. D., which are quoted at net prices.

| Thickness B. W. G. and Fractions | Equivalent in Decimal of inch | PRICE PER FOOT | | | | | | Thickness B. W. G. and Fractions | Equivalent in Decimal of inch | PRICE PER FOOT | | | | | | | |
|---|-------------------------------------|-------------------------|----------------|---------------|----------------|---------------|----------------|---|-------------------------------------|-------------------------|----------------|---------------|----------------|---------------|----------------|--|--|
| | | OUTSIDE DIAMETER INCHES | | | | | | | | OUTSIDE DIAMETER INCHES | | | | | | | |
| | | $\frac{3}{16}$ | $\frac{7}{32}$ | $\frac{1}{4}$ | $\frac{5}{16}$ | $\frac{3}{8}$ | $\frac{7}{16}$ | | | $\frac{3}{16}$ | $\frac{7}{32}$ | $\frac{1}{4}$ | $\frac{5}{16}$ | $\frac{3}{8}$ | $\frac{7}{16}$ | | |
| 26 | .018 | .25 | .25 | .25 | .27 | .28 | .29 | 20 | .035 | .25 | .25 | .25 | .27 | .28 | .30 | | |
| 25 | .020 | .25 | .25 | .25 | .27 | .28 | .29 | 19 | .042 | .26 | .26 | .26 | .28 | .29 | .31 | | |
| 24 | .022 | .25 | .25 | .25 | .27 | .28 | .29 | 18 | .049 | .27 | .27 | .27 | .29 | .30 | .32 | | |
| 23 | .025 | .25 | .25 | .25 | .27 | .28 | .29 | 17 | .058 | .28 | .28 | .28 | .30 | .31 | .33 | | |
| 22 | .028 | .25 | .25 | .25 | .27 | .28 | .29 | 16 | .065 | .30 | .30 | .30 | .32 | .33 | .35 | | |
| 21 | .032 | .25 | .25 | .25 | .27 | .28 | .29 | ... | .... | ... | ... | ... | ... | ... | ... |  |  |

| Thickness B. W. G. and Fractions | Equivalent in Decimal of inch | PRICE PER FOOT. OUTSIDE DIAMETER INCHES | | | | | | | | | | | |
|---|-------------------------------------|---|---------------|---------------|---------------|------|----------------|----------------|----------------|----------------|----------------|------|--|
| | | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{7}{8}$ | 1 | $1\frac{1}{8}$ | $1\frac{1}{4}$ | $1\frac{3}{8}$ | $1\frac{1}{2}$ | $1\frac{3}{4}$ | 2 | |
| 22 | .028 | .30 | .33 | .36 | .38 | .40 | .42 | .44 | ... | ... | ... | ... | |
| 21 | .032 | .30 | .33 | .36 | .38 | .40 | .42 | .44 | ... | ... | ... | ... | |
| 20 | .035 | .31 | .34 | .38 | .39 | .41 | .43 | .46 | .49 | .52 | ... | ... | |
| 19 | .042 | .31 | .35 | .38 | .40 | .42 | .45 | .48 | .52 | .55 | ... | ... | |
| 18 | .049 | .32 | .36 | .39 | .42 | .44 | .48 | .51 | .55 | .60 | ... | ... | |
| 17 | .058 | .33 | .37 | .41 | .44 | .47 | .51 | .55 | .60 | .65 | ... | ... | |
| 16 | .065 | .35 | .39 | .43 | .47 | .50 | .55 | .60 | .65 | .70 | .94 | 1.04 | |
| 15 | .072 | .37 | .41 | .45 | .49 | .54 | .59 | .64 | .70 | .75 | .97 | 1.07 | |
| 14 | .083 | .38 | .43 | .48 | .52 | .57 | .63 | .69 | .75 | .81 | 1.00 | 1.10 | |
| 13 | .095 | .40 | .45 | .50 | .55 | .62 | .68 | .75 | .81 | .88 | 1.08 | 1.18 | |
| 12 | .109 | .42 | .48 | .54 | .59 | .66 | .73 | .81 | .88 | .95 | 1.14 | 1.26 | |
| 11 | .120 | .45 | .51 | .57 | .63 | .70 | .78 | .87 | .94 | 1.02 | 1.28 | 1.40 | |
| 10 | .134 | ... | .54 | .60 | .67 | .74 | .84 | .94 | 1.02 | 1.10 | 1.34 | 1.47 | |
| $\frac{5}{8}$ | .156 | ... | ... | .70 | .78 | .86 | .96 | 1.04 | 1.12 | 1.24 | 1.40 | 1.54 | |
| $\frac{7}{16}$ | .188 | ... | ... | .74 | .86 | .98 | 1.10 | 1.22 | 1.34 | 1.46 | 1.70 | 1.86 | |
| $\frac{7}{32}$ | .219 | ... | ... | ... | .94 | 1.06 | 1.20 | 1.34 | 1.48 | 1.62 | 1.90 | 2.10 | |
| $\frac{1}{4}$ | .250 | ... | ... | ... | ... | 1.14 | 1.30 | 1.46 | 1.62 | 1.78 | 2.08 | 2.32 | |
| $\frac{9}{32}$ | .281 | ... | ... | ... | ... | ... | 1.38 | 1.54 | 1.70 | 1.88 | 2.20 | 2.48 | |
| $\frac{1}{6}$ | .313 | ... | ... | ... | ... | ... | ... | 1.62 | 1.78 | 1.98 | 2.32 | 2.64 | |
| $\frac{3}{16}$ | .344 | ... | ... | ... | ... | ... | ... | 1.70 | 1.92 | 2.14 | 2.48 | 2.82 | |
| $\frac{3}{8}$ | .375 | ... | ... | ... | ... | ... | ... | 1.78 | 2.04 | 2.28 | 2.64 | 3.00 | |
| $\frac{1}{8}$ | .438 | ... | ... | ... | ... | ... | ... | ... | 2.20 | 2.52 | 2.92 | 3.32 | |
| $\frac{1}{2}$ | .500 | ... | ... | ... | ... | ... | ... | ... | ... | 2.68 | 3.16 | 3.66 | |
| $\frac{9}{16}$ | .563 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 3.36 | 3.94 | |
| $\frac{5}{8}$ | .625 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 4.26 | |

Larger sizes also, square and rectangular shapes quoted on application.

Mill lengths are random, generally 5 feet and over.

COMPARISON STANDARD STEAM, GAS, AND WATER PIPE SIZES
AND NEAREST SIZES

SHELBY COLD DRAWN SEAMLESS

| Nominal Size | STANDARD PIPE | | | | EXTRA STRONG PIPE | | | | DOUBLE EXTRA STRONG PIPE | | | |
|--------------|-----------------|-------------------------|-------------------|-------------------------------------|-------------------------|-------------------|-------------------------------------|-------------------------|--------------------------|--------------------------------------|-----------|-----------|
| | Inside Diameter | Nominal Weight per Foot | Thickness of Wall | Nearest Fractional size of Seamless | Nominal Weight per Foot | Thickness of Wall | Nearest Fractional size of Seamless | Nominal Weight per Foot | Thickness of Wall | Nearest Fractional sizes of Seamless | O. D. | Thickness |
| Size | O. D. | | O. D. | Thickness | | O. D. | Thickness | | | O. D. | Thickness | |
| 1/8 | .405 | .24 | .068 | 16 Ga. | .29 | .100 | 13 Ga. | ... | ... | ... | ... | ... |
| 1/4 | .540 | .42 | .088 | 14 Ga. | .54 | .123 | 11 Ga. | ... | ... | ... | ... | ... |
| 3/8 | .675 | .56 | .091 | 13 Ga. | .74 | .127 | 10 Ga. | ... | ... | ... | ... | ... |
| 1/2 | .840 | .84 | .109 | 12 Ga. | 1.09 | .149 | 9 Ga. | 1.70 | .298 | 7 1/2 | 1 1/16 | 1/16 |
| 5/8 | 1.050 | 1.12 | .113 | 1 1/16 | 12 Ga. | 1.39 | 157 | 8 Ga. | 2.44 | .314 | 1 1/16 | 1/16 |
| 1 | 1.315 | 1.67 | .134 | 1 5/16 | 10 Ga. | 2.17 | 182 | 7 Ga. | 3.65 | .364 | 1 5/16 | 2 1/2 |
| 1 1/4 | 1.660 | 2.24 | .140 | 1 5/8 | 9 Ga. | 3.00 | 194 | 5 1/8 | 5.20 | .388 | 1 5/8 | 2 1/2 |
| 1 1/2 | 1.900 | 2.68 | .145 | 1 7/8 | 9 Ga. | 3.63 | 203 | 1 7/8 | 6 Ga. | 4.40 | .406 | 1 7/8 |
| 2 | 2.375 | 3.61 | .154 | 2 3/8 | 5 | 5.02 | 221 | 2 3/8 | 5 Ga. | 9.02 | .442 | 2 3/8 |
| 2 1/2 | 2.875 | 5.74 | .204 | 2 7/8 | 6 Ga. | 7.67 | 280 | 2 7/8 | 13.68 | .560 | .2 1/2 | 9/16 |
| 3 | 3.500 | 7.54 | .217 | 3 3/2 | 7 | 10.25 | 304 | 3 1/2 | 18.56 | .608 | .3 1/2 | 3 1/2 |
| 3 1/2 | 4.000 | 9.00 | .226 | 4 | 4 Ga. | 12.47 | 321 | 4 | 22.75 | .642 | 4 | 5/8 |
| 4 | 4.500 | 10.67 | .237 | 4 1/2 | 4 Ga. | 14.97 | 341 | 4 1/2 | 27.48 | .682 | 4 1/2 | 11/16 |
| 4 1/2 | 5.000 | 12.49 | .246 | 5 | 1/4 | 18.22 | 360 | 5 | 32.53 | .718 | 5 | 3/4 |
| 5 | 5.563 | 14.50 | .259 | 5 5/8 | 9 | 20.54 | 375 | 5 5/8 | 38.12 | .750 | 5 5/8 | 3/4 |
| 6 | 6.625 | 18.76 | .280 | 6 5/8 | 9 | 28.58 | 437 | 6 5/8 | 53.11 | .875 | 6 5/8 | 7/8 |
| 7 | 7.625 | 23.27 | .301 | 7 5/8 | 5 1/2 | 37.67 | 500 | 7 5/8 | 62.38 | .875 | 7 5/8 | 7/8 |
| 8 | 8.625 | 28.18 | .322 | 8 5/8 | 11 | 43.00 | 500 | 8 5/8 | 71.62 | .875 | 8 5/8 | 7/8 |
| 9 | 9.625 | 33.70 | .344 | 9 5/8 | 12 | 48.25 | 500 | 9 5/8 | ... | ... | ... | ... |
| 10 | 10.750 | 40.00 | .366 | 10 3/4 | 8 | 54.25 | 500 | 10 3/4 | 1/2 | ... | ... | ... |
| 11 | 11.750 | 45.00 | .375 | 11 3/4 | 8 | ... | ... | ... | ... | ... | ... | ... |
| 12 | 12.750 | 49.00 | .375 | 12 3/4 | 8 | 65.00 | 500 | 12 3/4 | 1/2 | ... | ... | ... |

COMPARISON OF STANDARD GAUGES IN GENERAL USE

| No. of Gauge | THICKNESS IN DECIMALS OF AN INCH | | | | | | No. of Gauge | THICKNESS IN DECIMALS OF AN INCH | | | | | |
|--------------|----------------------------------|----------------|---------------------------------|---------------|--------------------|--|--------------|----------------------------------|----------------|---------------------------------|---------------|--------------------|--|
| | Birming-ham or Stubb's Iron Wire | Brown & Sharpe | British Imperial or New British | United States | Stubb's Steel Wire | Diameter of Amer. Steel & Wire Co.'s Gauge | | Birming-ham or Stubb's Iron Wire | Brown & Sharpe | British Imperial or New British | United States | Stubb's Steel Wire | Diameter of Amer. Steel & Wire Co.'s Gauge |
| 0000 | .454 | .46000 | .400 | 40625 | ... | .3938 | 12 | .109 | .08081 | .104 | .10937 | .185 | .1055 |
| 000 | .425 | .40964 | .372 | 37500 | ... | .3625 | 13 | .095 | .07196 | .092 | .09375 | .182 | .0915 |
| 00 | .380 | .36480 | .348 | 34375 | ... | .3310 | 14 | .083 | .06408 | .080 | .07812 | .180 | .0800 |
| 0 | .340 | .32486 | .324 | 31250 | ... | .3065 | 15 | .072 | .05767 | .072 | .07031 | .178 | .0720 |
| 1 | .300 | .28930 | .300 | 28125 | .227 | .2830 | 16 | .065 | .05082 | .064 | .06250 | .175 | .0625 |
| 2 | .284 | .25763 | .276 | 26562 | .219 | .2625 | 17 | .058 | .04526 | .056 | .05625 | .172 | .0540 |
| 3 | .259 | .22942 | .252 | 25000 | .212 | .2437 | 18 | .049 | .04030 | .048 | .05000 | .168 | .0475 |
| 4 | .238 | .20431 | .232 | 23437 | .207 | .2253 | 19 | .042 | .03589 | .040 | .04375 | .164 | .0410 |
| 5 | .220 | .18194 | .212 | 21875 | .204 | .2070 | 20 | .035 | .03196 | .036 | .03750 | .161 | .0348 |
| G | .203 | .16202 | .192 | 20312 | .201 | .1920 | 21 | .032 | .0246 | .032 | .03437 | .157 | .03175 |
| 7 | .180 | .14428 | .176 | 18750 | .199 | .1770 | 22 | .028 | .02535 | .028 | .03125 | .155 | .0286 |
| 8 | .165 | .12849 | .160 | 17187 | .197 | .1620 | 23 | .025 | .02257 | .024 | .02812 | .153 | .0258 |
| 9 | .148 | .11443 | .144 | 15625 | .194 | .1483 | 24 | .022 | .02010 | .022 | .02500 | .151 | .0230 |
| 10 | .134 | .10189 | .128 | 14062 | .191 | .1350 | 25 | .020 | .01790 | .020 | .02187 | .148 | .0204 |
| 11 | .120 | .09074 | .116 | 12500 | .188 | .1205 | 26 | .018 | .01594 | .018 | .01875 | .146 | .0181 |

CAST-IRON PIPE



B 11

| Nominal Inside Diameter Inches | CLASS A GAS NOT TARRED 100 Foot Head. 43 Pounds Pressure. | | CLASS B STANDARD. 200 Foot Head. 86 Pounds Pressure. | | CLASS C MEDIUM HEAVY. 400 Foot Head. 173 Pounds Pressure. | |
|---|--|-------------------------------|---|------------------------------|--|-------------------------------|
| | Thick- ness Inches. | Weight Per Foot Pounds. | Thick- ness Inches | Weight Per Foot Pounds | Thick- ness Inches | Weight Per Foot Pounds. |
| | .39 | 14.5 | .42 | 16.2 | .45 | 17.1 |
| 4 | .42 | 20.0 | .45 | 21.7 | .48 | 23.3 |
| 6 | .44 | 30.8 | .48 | 33.3 | .51 | 35.8 |
| 8 | .46 | 42.9 | .51 | 47.5 | .56 | 52.1 |
| 10 | .50 | 57.1 | .57 | 63.8 | .62 | 70.8 |
| 12 | .54 | 72.5 | .62 | 82.1 | .68 | 91.7 |
| 14 | .57 | 89.6 | .66 | 102.5 | .74 | 116.7 |
| 16 | .60 | 108.3 | .70 | 125.0 | .80 | 143.8 |
| 18 | .64 | 129.2 | .75 | 150.0 | .87 | 175.0 |
| 20 | .67 | 150.0 | .80 | 175.0 | .92 | 208.3 |
| 24 | .76 | 204.2 | .89 | 233.3 | 1.04 | 279.2 |
| 30 | .88 | 291.7 | 1.03 | 333.3 | 1.20 | 400.0 |
| 36 | .99 | 391.7 | 1.15 | 454.2 | 1.36 | 545.8 |
| 42 | 1.10 | 512.5 | 1.28 | 591.7 | 1.54 | 716.7 |
| 48 | 1.26 | 666.7 | 1.42 | 750.0 | 1.71 | 908.3 |
| 54 | 1.35 | 800.0 | 1.55 | 933.3 | 1.90 | 1141.7 |
| 60 | 1.39 | 916.7 | 1.67 | 1104.2 | 2.00 | 1341.7 |
| 72 | 1.62 | 1283.4 | 1.95 | 1545.8 | 2.39 | 1904.2 |
| 84 | 1.72 | 1633.4 | 2.22 | 2104.2 | ..... | ..... |

All lengths to lay 12 feet. Weights are approximate including allowance for bell.

HYDROSTATIC PRESSURE TESTS OF CAST-IRON PIPE

| Class | A | B | C | D |
|---|-----|-----|-----|-----|
| 20-inch and larger, per square inch..... pounds | 150 | 200 | 250 | 300 |
| 18 " " smaller, " " " " | 300 | 300 | 300 | 300 |

APPROXIMATE WEIGHTS OF LEAD AND HEMP REQUIRED FOR JOINTS

| Pipe..... inches | 3 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 |
|------------------------------|------|-------|-------|-------|------|------|--------|------|------|------|
| Lead, 2-inches thick, pounds | 6 | 7.5 | 10.25 | 13.25 | .16 | 19 | 22 | 30 | 33.8 | 37 |
| Hemp..... " | .18 | .21 | .31 | .44 | .53 | .61 | .81 | .94 | 1 | 1.25 |
| Pipe..... inches | 24 | 30 | 36 | 42 | 48 | 54 | 60 | 72 | .84 | .... |
| Lead, 2-inches thick, pounds | 44 | 54.25 | 64.75 | 75.25 | 85.5 | 97.6 | 108.30 | 128 | 147 | .... |
| Hemp..... " | 1.50 | 2.06 | 3 | 3.62 | 4.37 | 6.25 | 8.25 | 12.5 | 15 | .... |

SPECIALS FOR CAST-IRON PIPE**QUARTER BEND**

B12

EIGHTH BEND

B13

TEE

B14

CROSS

B15

TABLE OF APPROXIMATE WEIGHTS

Patterns at various mills vary greatly in size, so that it is impossible to show weights that are exact; but in the following list we have tried to show about the maximum weights.

QUARTER BENDS, 90°

| Size.... in. | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 24 | 30 | 36 |
|--------------|----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-------|-------|
| Pounds.... | 82 | 130 | 200 | 278 | 366 | 504 | 750 | 888 | 1,070 | 1,656 | 2,836 | 4,820 |

EIGHTH BENDS, 45°

| Size.... in. | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 24 | 30 | 36 |
|--------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-------|
| Pounds.... | 66 | 105 | 150 | 202 | 265 | 442 | 558 | 663 | 964 | 1,515 | 2,291 | 4,012 |

SIXTEENTH BENDS, 22½°

| Size in. | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 24 | 30 | 36 |
|---------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-------|
| Pounds.... | 66 | 105 | 150 | 202 | 265 | 382 | 484 | 574 | 858 | 1,372 | 2,080 | 4,012 |

TEES

| Size Inches | Weight Pounds | Size Inches | Weight Pounds | Size Inches | Weight Pounds | Size Inches | Weight Pounds |
|----------------|------------------|----------------|------------------|----------------|------------------|----------------|------------------|
| 3x3x3 | 94 | 8x 8x 4 | 255 | 12x12x10 | 491 | 16x16x 8 | 808 |
| 4x4x4 | 128 | 10x10x10 | 395 | 12x12x 8 | 474 | 20x20x20 | 1438 |
| 6x6x6 | 200 | 10x10x 8 | 371 | 12x12x 6 | 458 | 24x24x24 | 2113 |
| 6x6x4 | 183 | 10x10x 6 | 352 | 12x12x 4 | 445 | 30x30x30 | 3660 |
| 8x8x8 | 294 | 10x10x 4 | 338 | 16x16x16 | 969 | 36x36x36 | 5567 |
| 8x8x6 | 270 | 12x12x12 | 512 | 16x16x12 | 861 | 48x48x48 | ..... |

CROSSES

| Size Inches | Weight Pounds | Size Inches | Weight Pounds | Size Inches | Weight Pounds | Size Inches | Weight Pounds |
|----------------|------------------|----------------|------------------|----------------|------------------|----------------|------------------|
| 3x3x3x3 | 125 | 8x 8x 4x 4 | 294 | 12x12x10x10 | 577 | 24x24x24x24 | 2694 |
| 4x4x4x4 | 166 | 10x10x10x10 | 493 | 12x12x 8x 8 | 545 | 30x30x30x30 | 4609 |
| 6x6x6x6 | 257 | 10x10x 8x 8 | 443 | 12x12x 6x 6 | 512 | 36x36x36x36 | 6857 |
| 6x6x4x4 | 221 | 10x10x 6x 6 | 406 | 12x12x 4x 4 | 486 | 48x48x48x48 | ..... |
| 8x8x8x8 | 372 | 10x10x 4x 4 | 377 | 16x16x16x16 | 1259 | ..... | ..... |
| 8x8x6x6 | 325 | 12x12x12x12 | 623 | 20x20x20x20 | 1828 | ..... | ..... |

SPECIALS FOR CAST-IRON PIPE**Y BRANCH**

B16

REDUCER

B17

INCREASER

B18

OFFSET

B19

APPROXIMATE WEIGHT

| "Y" BRANCHES | | REDUCERS | | | | INCREASERS | | OFFSETS | |
|----------------|------------------|----------------|------------------|----------------|------------------|----------------|------------------|--------------------|------------------|
| Size Inches | Weight Pounds | Size Inches | Weight Pounds | Size Inches | Weight Pounds | Size Inches | Weight Pounds | Size Inches | Weight Pounds |
| 4 x 4 | 103 | 4 x 3 | 45 | 12 x 4 | 179 | 3 x 4 | 48 | 4 x 8 | 91 |
| 6 x 6 | 181 | 6 x 4 | 67 | 14 x 12 | 360 | 4 x 6 | 104 | 6 x 14 | 183 |
| 8 x 8 | 291 | 6 x 3 | 60 | 14 x 10 | 320 | 4 x 8 | 132 | 8 x 15 | 280 |
| 10 x 10 | 434 | 8 x 6 | 143 | 14 x 8 | 288 | 4 x 10 | 162 | 10 x 16 | 390 |
| 12 x 12 | 632 | 8 x 4 | 119 | 16 x 12 | 405 | 6 x 8 | 150 | 12 x 17 | 530 |
| 14 x 14 | 985 | 10 x 8 | 198 | 16 x 10 | 364 | 6 x 10 | 180 | 14 x 18 | 695 |
| 16 x 16 | 1413 | 10 x 6 | 169 | 20 x 16 | 711 | 6 x 12 | 218 | 16 x 19 | 900 |
| 20 x 20 | 2199 | 10 x 4 | 146 | 20 x 12 | 576 | 8 x 10 | 201 | Last figures | ... |
| 24 x 24 | 3599 | 12 x 10 | 261 | 24 x 16 | 838 | 8 x 12 | 240 | indicate radius | ... |
| ..... | ... | 12 x 8 | 231 | 30 x 24 | 2575 | 10 x 12 | 267 | ..... | ... |
| ..... | ... | 12 x 6 | 202 | 36 x 30 | 3684 | ..... | ..... | ..... | ... |

SLEEVE

B20

PLUG

B21

CAP

B22

APPROXIMATE WEIGHT

| Size.....inches | 3 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 24 | 30 | 36 | 48 |
|-------------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|------|
| Sleeves....pounds | 40 | 47 | 87 | 119 | 176 | 223 | 280 | 443 | 518 | 625 | 821 | 1,262 | 1,772 | 2,79 |
| Plugs....." | 10 | 10 | 25 | 33 | 45 | 65 | 85 | 100 | 125 | 150 | 185 | 370 | 470 | ... |
| Caps....." | 20 | 30 | 40 | 60 | 100 | 120 | 150 | 215 | 225 | 284 | 420 | 450 | ... | ... |

SPLIT TEE

B27

SPLIT SLEEVE

B28

TAPPED PLUG
For Connection Wrought
and Cast Iron Pipe



B29

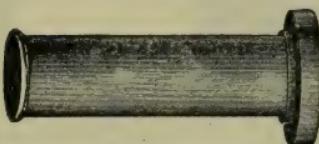
PRICE EACH

| Size.....inches | 3 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 |
|--------------------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| Split Tees..... | 5.00 | 6.25 | 8.25 | 10.75 | 12.50 | 15.00 | 18.75 | 25.00 | 30.00 | 35.00 |
| Split Sleeves..... | 2.50 | 2.50 | 3.75 | 5.50 | 7.50 | 10.00 | 12.00 | 16.00 | 20.00 | 25.00 |
| Tapped Plugs..... | 1.50 | 1.50 | 1.75 | 2.75 | 3.50 | 4.00 | 5.00 | 6.00 | ... | ... |

CAST-IRON PIPE



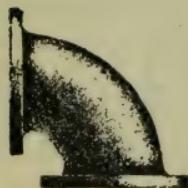
Flanged B31



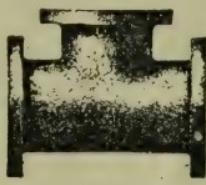
Spiggot and Flange B32



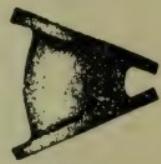
Hub and Flange B33



B34



B35



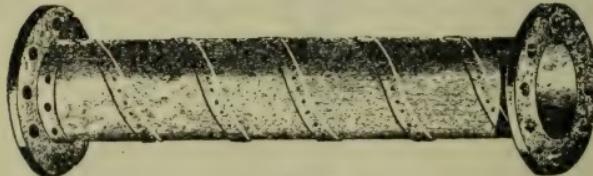
B36

Fittings for Flanged Cast Pipe, also for Spiral Riveted Pipe.
Prices Quoted on Application.

SPIRAL RIVETED FLANGE PRESSURE PIPE

Double Galvanized or Asphalted

Tested to 150 Pounds Hydrostatic Pressure



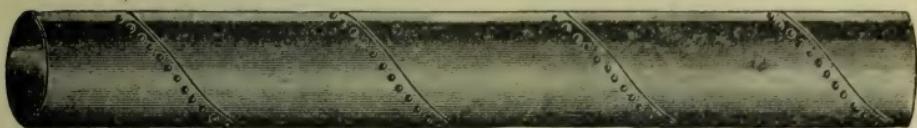
B39

PRICES INCLUDE FLANGES ATTACHED

List adopted February 15, 1900.

| | | | | | | | | | | |
|---------------------------------------|--------|------|------|------|------|------|------|------|------|-------|
| Inside Diameter | inches | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Thickness, B. W. G. number | | 20 | 20 | 20 | 18 | 18 | 18 | 18 | 16 | 16 |
| Double Galvanized.. per foot | | .50 | .70 | 1.00 | 1.20 | 1.40 | 1.70 | 2.00 | 2.60 | 2.85 |
| Asphalted | " | .35 | .45 | .55 | .75 | .80 | .95 | 1.10 | 1.45 | 1.55 |
| Approximate Weight per foot... pounds | | 2½ | 3 | 4 | 5 | 6 | 7 | 8 | 11 | 12 |
| Inside Diameter..... | inches | 12 | 13 | 14 | 15 | 16 | 18 | 20 | 22 | 24 |
| Thickness, B. W. G. number | | 16 | 16 | 14 | 14 | 14 | 14 | 14 | 12 | 12 |
| Double Galvanized.. per foot | | 3.15 | 3.60 | 4.00 | 4.40 | 5.00 | 6.00 | 7.00 | 9.00 | 10.50 |
| Asphalted..... " | | 1.80 | 1.95 | 2.50 | 2.75 | 3.05 | 3.50 | 3.90 | 5.55 | 6.00 |
| Approximate Weight per foot... pounds | | 14 | 15 | 20 | 22 | 24 | 29 | 34 | 40 | 50 |

Net prices are based on pipe in 20-foot lengths. If shorter are wanted net price must be proportionately higher on account of greater proportion of cost of flanges.

SPIRAL RIVETED PIPE—PLAIN ENDS

B40

BLACK OR GALVANIZED, PRICE PER FOOT

Birmingham Wire Gauge and Approximate Weight.

List adopted February 15, 1900.

| Size | | in. | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 12 | 14 | 16 |
|------------|-----------------|-----|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| No. 24 | Black | | .20 | .25 | .30 | .33 | .37 | .42 | .48 | .54 | .68 | | |
| | Asphalted.... | | .23 | .29 | .35 | .39 | .44 | .50 | .57 | .64 | .80 | | |
| | Galvanized.... | | .30 | .38 | .45 | .50 | .30 | .65 | .75 | .85 | 1.05 | | |
| | Wt. per 100 ft. | | 100 | 130 | 160 | 185 | 210 | 240 | 280 | 300 | 400 | | |
| 22 | Black | | .24 | .30 | .37 | .40 | .45 | .53 | .60 | .65 | .82 | 1.00 | |
| | Asphalted.... | | .27 | .34 | .42 | .46 | .52 | .61 | .69 | .75 | .94 | 1.14 | |
| | Galvanized.... | | .32 | .43 | .53 | .60 | .65 | .75 | .90 | 1.00 | 1.25 | 1.45 | |
| | Wt. per 100 ft. | | 130 | 160 | 200 | 230 | 260 | 300 | 340 | 380 | 490 | 575 | |
| 20 | Black | | .27 | .35 | .40 | .46 | .51 | .58 | .66 | .72 | .90 | 1.10 | 1.30 |
| | Asphalted.... | | .30 | .39 | .45 | .52 | .58 | .66 | .75 | .82 | 1.02 | 1.24 | 1.46 |
| | Galvanized.... | | .38 | .48 | .60 | .68 | .75 | .85 | .97 | 1.05 | 1.35 | 1.60 | 1.85 |
| | Wt. per 100 ft. | | 150 | 200 | 250 | 300 | 325 | 360 | 410 | 500 | 600 | 700 | 800 |
| 18 | Black | | .34 | .42 | .50 | .57 | .63 | .73 | .82 | .90 | 1.15 | 1.35 | 1.60 |
| | Asphalted.... | | .37 | .46 | .55 | .63 | .70 | .81 | .91 | 1.00 | 1.27 | 1.49 | 1.76 |
| | Galvanized.... | | .46 | .58 | .70 | .85 | .90 | 1.05 | 1.18 | 1.30 | 1.65 | 1.95 | 2.25 |
| | Wt. per 100 ft. | | 185 | 245 | 300 | 360 | 400 | 460 | 525 | 575 | 750 | 900 | 1.000 |
| Size | | in | 6 | 7 | 8 | 9 | 10 | 12 | 14 | 15 | 16 | 18 | 20 |
| No. 16 | Black | | .70 | .80 | .93 | 1.08 | 1.15 | 1.45 | 1.70 | | 2.00 | 2.20 | |
| | Asphalted.... | | .76 | .87 | 1.01 | 1.17 | 1.25 | 1.57 | 1.84 | 2.00 | 2.16 | 2.38 | 2.65 |
| | Galvanized.... | | 1.00 | 1.10 | 1.28 | 1.47 | 1.55 | 2.05 | 2.40 | 2.60 | 2.75 | 3.10 | 3.40 |
| | Wt. per 100 ft. | | 500 | 550 | 650 | 750 | 800 | 1,025 | 1,200 | 1,300 | 1,375 | 1,550 | 1,675 |
| 14 | Black | | .89 | 1.02 | 1.15 | 1.32 | 1.40 | 1.80 | 2.10 | 2.25 | 2.40 | 2.75 | 3.10 |
| | Asphalted.... | | .95 | 1.09 | 1.23 | 1.41 | 1.50 | 1.92 | 2.24 | 2.40 | 2.56 | 2.93 | 3.30 |
| | Galvanized.... | | 1.15 | 1.35 | 1.50 | 1.70 | 1.80 | 2.35 | 2.70 | 2.90 | 3.15 | 3.60 | 4.00 |
| | Wt. per 100 ft. | | 610 | 700 | 825 | 925 | 1,025 | 1,325 | 1,560 | 1,680 | 1,790 | 2,000 | 2,200 |
| 12 | Black | | 1.25 | 1.40 | 1.55 | 1.70 | 1.90 | 2.50 | 2.90 | 3.10 | 3.25 | 3.60 | 4.00 |
| | Asphalted.... | | 1.31 | 1.47 | 1.63 | 1.79 | 2.00 | 2.62 | 3.04 | 3.25 | 3.41 | 3.77 | 4.20 |
| | Galvanized.... | | 1.90 | 2.10 | 2.30 | 2.50 | 2.75 | 3.25 | 3.75 | 4.00 | 4.25 | 4.70 | 5.25 |
| | Wt. per 100 ft. | | 800 | 910 | 1,040 | 1,180 | 1,300 | 1,700 | 2,010 | 2,165 | 2,310 | 2,570 | 2,830 |

Black and Asphalted furnished in lengths up to 25 ft. Galvanized furnished in lengths up to 20 ft.

Weights given above are for Black only. Galvanized and Asphalted weigh from 10 to 20 per cent heavier.

Spiral Riveted Pipe, with sleeve for slip joint, or Crimped End Pipe, same price as Plain Ends.

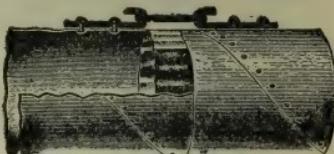
See Couplings next page.

CONNECTIONS FOR SPIRAL RIVETED PIPE

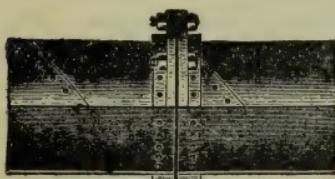
(See preceding page.)

PLAIN SLIP JOINT

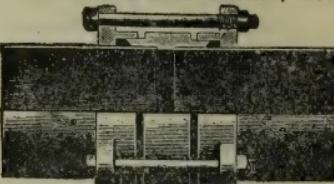
B41

**CRIMPED END SLIP JOINT
With Lugs for Wiring**

B42

**FLANGED JOINT
For Exhaust Steam, Etc.**

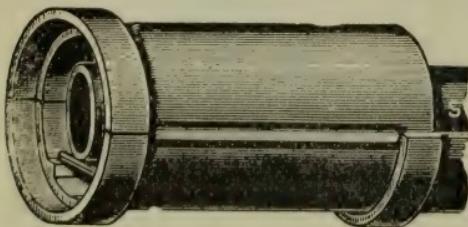
B43

BOLTED JOINT — For High Pressure Water Mains, Etc.

B44

| Size Inches | *FLANGES RIVETED TO PIPE | | Bolted Joints Complete Black Each | Size Inches | *FLANGES RIVETED TO PIPE | | Bolted Joints Complete Black Each |
|----------------|-----------------------------|--------------------|---|----------------|-----------------------------|--------------------|---|
| | Black Each | Galvanized Each | | | Black Each | Galvanized Each | |
| 3 | .32 | .48 | 1.15 | 12 | 1.72 | 2.56 | 6.00 |
| 4 | .42 | .64 | 1.40 | 14 | 2.15 | 3.20 | 7.25 |
| 5 | .54 | .80 | 1.70 | 15 | 2.56 | 3.84 | 8.00 |
| 6 | .64 | .96 | 2.10 | 16 | 3.64 | 5.44 | 8.50 |
| 7 | .86 | 1.28 | 2.50 | 18 | 4.16 | 6.24 | 10.00 |
| 8 | .96 | 1.44 | 3.25 | 20 | 4.60 | 6.88 | 11.50 |
| 9 | 1.28 | 1.92 | 4.00 | 22 | 7.48 | 11.20 | 12.50 |
| 10 | 1.50 | 2.24 | 4.75 | 24 | 8.00 | 12.00 | 13.50 |

*Price is for one Flange only. Bolts and Gaskets are not included. Lugs for wiring, 15 cents each. No extra charge for slip joints.



B47

**BANNON'S LIDDED
CLAY PIPE CONDUIT****FOR STEAM AND
WATER PIPE**

Each Section 2 feet long

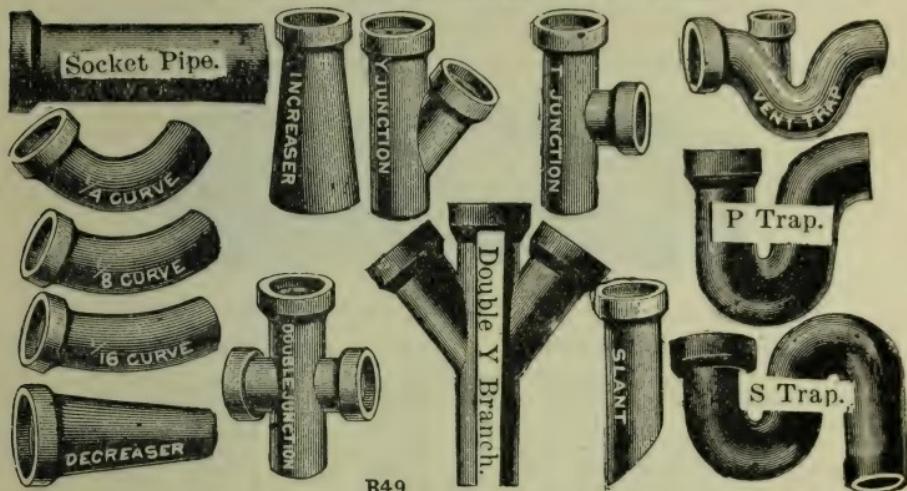
(Discount on this pipe is not governed by price of regular sewer pipe.)

| | | | | | | | | | | |
|-----------------------|--------|-----|-----|-----|-----|-----|------|------|------|------|
| Inside Diameter | inches | 6 | 8 | 10 | 12 | 15 | 18 | 20 | 24 | 30 |
| Per foot..... | | .25 | .35 | .55 | .70 | .90 | 1.05 | 1.35 | 2.00 | 4.25 |
| Weight per foot | pounds | 18 | 30 | 38 | 50 | 82 | 90 | 105 | 160 | 300 |

Bends same price as a length of pipe.

Is supplied with lugs, as shown in end of cut, every 10 feet, to rest bar on for pipe support.

SEWER PIPE AND FITTINGS



B49

| Size of Pipe Inches | Pipe Price, per Foot | Slants 1 Foot or less, Long Side per Foot | Elbows and Curves, Each | Increasers and Reducers, Each | R. P. S. and Single H. H. Traps, Each | Double H. H. Traps, Each | BRANCHES | | | | Weight Pipe per Foot, Pounds |
|------------------------|-------------------------|---|----------------------------|----------------------------------|--|-----------------------------|--|--|--|--|---------------------------------|
| | | | | | | | Branch 1 $\frac{1}{2}$ inches and less, Each | Branch 1 $\frac{1}{2}$ inches and larger, Each | Branches 1 $\frac{1}{2}$ inches and less, Each | Branches 1 $\frac{1}{2}$ inches and larger, Each | |
| 2 | .16 | .... | .50 | .... | 1.50 | 1.90 | .05 $\frac{1}{3}$ | .72 | .... | 1.12 | .... |
| 3 | .16 | .48 | .50 | .64 | 1.50 | 1.90 | .05 $\frac{1}{3}$ | .72 | .... | 1.12 | .... |
| 4 | .20 | .60 | .65 | .80 | 2.00 | 2.50 | .06 $\frac{2}{3}$ | .90 | .... | 1.40 | .... |
| 5 | .25 | .75 | .85 | 1.00 | 2.50 | 3.13 | .08 $\frac{1}{3}$ | 1.13 | .... | 1.76 | .... |
| 6 | .30 | .90 | 1.10 | 1.20 | 3.50 | 4.25 | .10 | 1.35 | .... | 2.10 | .... |
| 8 | .50 | 1.50 | 2.00 | 2.00 | 6.60 | 7.75 | .16 $\frac{2}{3}$ | 2.25 | .... | 3.50 | .... |
| 9 | .60 | 1.80 | 2.40 | 2.40 | 7.50 | 9.00 | .20 | 2.70 | .... | 4.20 | .... |
| 10 | .75 | 2.25 | 3.00 | 3.00 | 9.00 | 11.00 | .25 | 3.40 | .... | 5.30 | .... |
| 12 | 1.00 | 3.00 | 4.00 | 4.00 | 15.00 | 16.50 | .33 $\frac{1}{3}$ | 4.50 | .... | 7.00 | .... |
| 15 | 1.35 | 4.05 | 5.40 | 5.40 | .... | .... | .45 | 6.10 | 11.85 | 9.50 | 18.30 |
| 18 | 1.70 | 5.10 | 6.80 | 6.80 | .... | .... | .... | 7.65 | 14.88 | 11.90 | 22.96 |
| 20 | 2.25 | 6.75 | 9.00 | 9.00 | .... | .... | .... | 10.13 | 19.70 | 15.76 | 30.40 |
| 22 | 2.75 | 8.25 | 11.00 | 11.00 | .... | .... | .... | 12.38 | 24.07 | 19.26 | 37.14 |
| 24 | 3.25 | 9.75 | 13.00 | 13.00 | .... | .... | .... | 14.63 | 28.45 | 22.76 | 43.90 |
| 27 | 4.25 | 12.75 | 20.00 | 17.00 | .... | .... | .... | 21.25 | 31.88 | 31.88 | 53.14 |
| 30 | 5.50 | 16.50 | 27.50 | 22.00 | All Branches 27 inches and larger are 30 inches long. | .... | .... | 27.50 | 41.25 | 41.25 | 68.75 |
| 33 | 6.25 | 18.75 | 30.00 | 25.00 | .... | .... | .... | 31.25 | 46.88 | 46.88 | 78.14 |
| 36 | 7.00 | 21.00 | 32.50 | 28.00 | .... | .... | .... | 35.00 | 52.50 | 52.50 | 87.50 |

Flat Strainers, Double the price of Stoppers or Plugs.

Increasers shall have sockets on small end. Reducers socket on large end. No slant charged at less than 1 foot. Excess over 1 foot at proportionate rate.

V Branches, special fitting (not illustrated), quoted on application.

WOOD PIPE**Solid and Stave**

Can be used for suction or discharge. Solid bored log is recommended for mine use.

**B50**

Spirally Banded with Galvanized Wire or Hoop, and Coated with Imperishable Asphaltum Cement

| Inside Diameter.....inches | 2 | 3 | 4 | 5 | 6 | 7 |
|--|------|------|------|------|------|------|
| Price per ft., tested 160 lbs. or 370 ft. head | .24 | .40 | .60 | .76 | .80 | .92 |
| " " " 40 " " 92 " " | .22 | .36 | .56 | .72 | .76 | .88 |
| Weight (Approx.).....per ft. | 5 | 9 | 12 | 16 | 18 | 20 |
| Thimbles.....each | .12 | .20 | .26 | .32 | .40 | .46 |
| Reducers and Plugs....." | .20 | .30 | .40 | .50 | .60 | .70 |
| Wood Sleeves, Tees, Elbows, Crosses .. " | 3.50 | 4.00 | 5.00 | 6.00 | 7.50 | 9.00 |

| Inside Diameter.....inches | 8 | 9 | 10 | 12 | 14 | 16 |
|--|-------|-------|-------|-------|-------|-------|
| Price per ft., tested 160 lbs. or 370 ft. head | 1.00 | 1.12 | 1.24 | 1.50 | 2.00 | 2.90 |
| " " " 40 " " 92 " " | .92 | 1.08 | 1.20 | 1.40 | 1.80 | 2.60 |
| Weight (Approx.).....per ft. | 22 | 23 | 25 | 30 | 40 | 50 |
| Thimbles .....each | .50 | .60 | .70 | .90 | 1.10 | 1.30 |
| Reducers and Plugs....." | .80 | .90 | 1.00 | 1.20 | 1.40 | 1.60 |
| Wood Sleeves, Tees, Elbows, Crosses.. " | 11.00 | 12.50 | 14.00 | 18.00 | 24.00 | 32.00 |

Larger sizes quoted on application.

Wood Tees, Elbows, and Crosses can be used for 80 pounds pressure and less.

Driving Plugs furnished free with large orders.

Solid Wood Mine Pipe is most efficient for conveying mine water, brine, acids, and other liquids which would destroy iron pipe.

SQUARE ACID PROOF PIPE**And Tanners' Liquor Logs**

Not intended for pressure.

Fits together with socket ends as illustrated above.

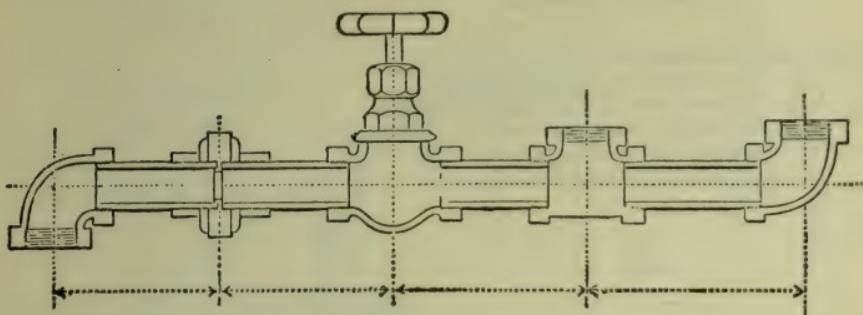
Manufactured from Selected White Pine Timber.

When ordering mention bore, also length desired.

| Size | Price Lineal Foot | Size | Price Lineal Foot |
|-------|-------------------|---------|-------------------|
| 4 x 4 | \$0.13.2 | 8 x 8 | .53.34 |
| 5 x 5 | .20.84 | 9 x 9 | .67.50 |
| 6 x 6 | .30 | 10 x 10 | .83.34 |
| 7 x 7 | .40.84 | 12 x 12 | 1.20 |

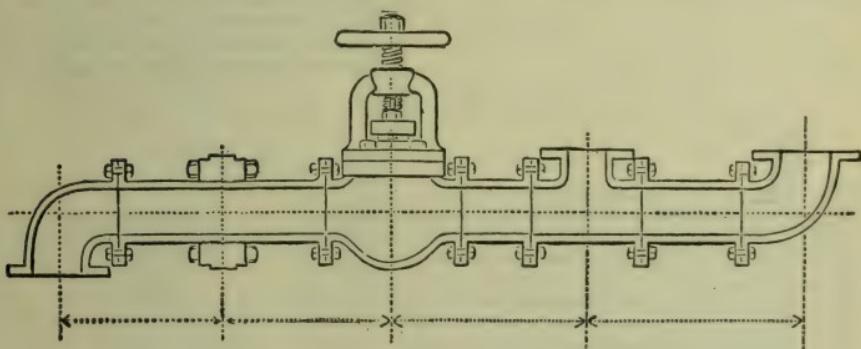
Square Logs are furnished with or without bands in mortice ends.

For **WOOD PIPE COVERING** see index.

SPECIAL PIPE CUT TO ORDER

B51

Diagram showing Screwed Valve and Fittings

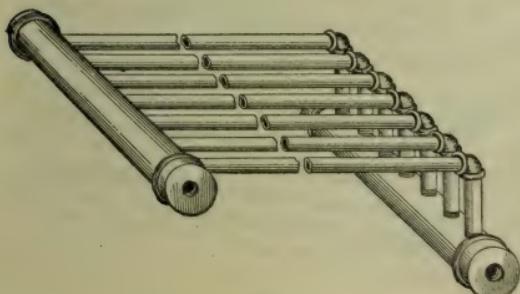


B52

Diagram showing Flanged Valve and Fittings

We are equipped with the most improved facilities for cutting, threading, and fitting all sizes of pipe to sketch.

In laying out work of this kind great care should be taken in making sketches. All measurements should be given center to center, as shown in above diagrams. It is also necessary to know for what purpose the pipe is to be used and pressure required to stand.



B53

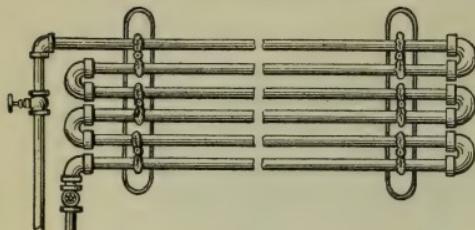
WROUGHT PIPE HEADER

We usually make these of 4-inch pipe—either Standard or Extra Heavy—the latter gives more thread surface and is best for high pressure. The runs are usually of 1-inch standard pipe with right and left ells and nipples. Should not be closer than $2\frac{1}{2}$ inches center to center. If larger than 1-inch pipe is used for runs, headers should be larger than 4-inch in order to secure thread bearing.

Quoted on application.

PIPE COILS

For factory heating. Generally made of 1-inch pipe



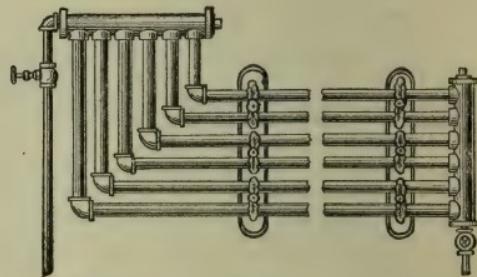
B55

WALL COIL—B55

Made with Return Bends, any size to order. Quoted on application. Valves Extra.

ANGLE WALL COIL—B56

Made with Manifolds, any size to order. Quoted on application. Valves Extra.



B56



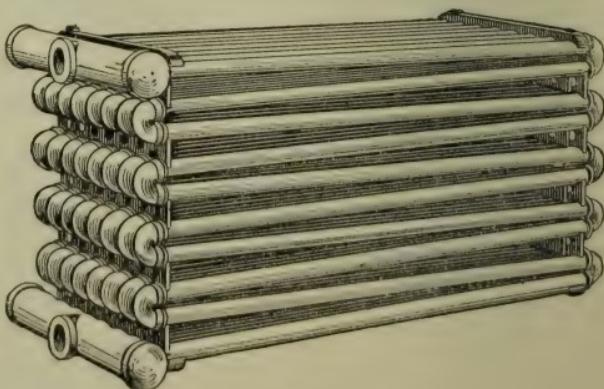
B57

BRACKET DOUBLE WALL COIL—B57

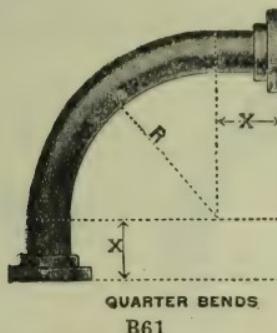
Made with return Bends, any size to order. Quoted on application.

BOX COIL—B58

Made with Manifold and Return Bends. Any size to order. Quoted on application.



B58

SQUARE OR 90-DEGREE BENDS OF STEEL PIPE

(For Standard Radius Bends for taking care of expansion in pipe lines, see note at bottom of page.)

BENDS OF MINIMUM OR SPECIAL RADIUS

to be used instead of cast-iron fittings

| Pipe Size.....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ |
|---------------------------------------|-------|-------|-------|-------|-------|--------|
| Minimum Radius..... | 6 | 7 | 8 | 10 | 12 | 14 |
| Straight Pipe each end.....inches | 3 | 3½ | 4 | 4½ | 5 | 5½ |
| Price, Standard Pipe, thr'd'd ends... | 2.60 | 3.60 | 4.90 | 6.80 | 8.30 | 11.20 |
| Price, Extra Heavy Pipe, thr'd'd ends | 3.60 | 5.30 | 7.20 | 9.80 | 12.40 | 18.70 |
| Add for two St'd Flanges Scr'd on... | 3.40 | 4.20 | 5.00 | 5.60 | 6.70 | 8.00 |
| Add for two Ext. Hea. Fl'ges Scr'd on | 4.00 | 5.60 | 6.30 | 7.00 | 8.40 | 10.00 |
| Pipe Size.....inches | 5 | 6 | 7 | 8 | 10 | 12 |
| Minimum Radius | 15 | 20 | 24 | 28 | 40 | 50 |
| Straight Pipe each end.....inches | 6 | 6½ | 7 | 8 | 12 | 14 |
| Price, Standard Pipe, thr'd'd ends. | 12.70 | 18.30 | 28.70 | 35.50 | 76.10 | 107.00 |
| Price, Extra Heavy Pipe, thr'd'd ends | 21.80 | 33.40 | 49.50 | 63.00 | | |
| Add for two St'd Flanges Scr'd on... | 8.80 | 10.40 | 13.50 | 16.00 | 23.50 | 31.00 |
| Add for two Ext. Hea. Fl'ges Scr'd on | 10.70 | 12.50 | 16.50 | 19.00 | 26.50 | 35.00 |

Flanges quoted on above are Cast-Iron.

If flanges peened in addition to screwing add 10%.

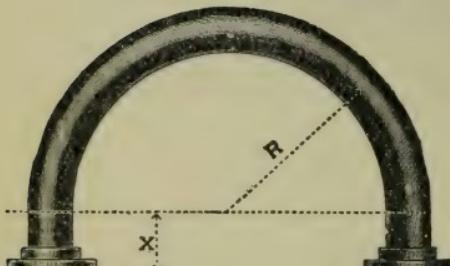
Forge steel, or special flanges of any kind can be furnished at special price.

Larger bends up to and including 30-inch quoted on application.

NOTE—Minimum Radius Bends are not intended for taking care of expansion in pipe lines; for this purpose we furnish what are known as Standard Radius Bends, the radius being much longer. The rule under B63 and B64 should apply.

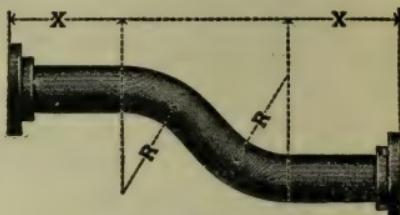
Prices quoted on specifications.

PIPE BENDS
 Made From
WROUGHT-IRON OR STEEL PIPE
STANDARD OR EXTRA HEAVY



U BENDS

B63



OFFSET BENDS

B64

The radius of any bend should not be less than 5 diameters of the pipe and a larger radius is much preferable. The length "X" of straight pipe at each end of bend should be not less than as follows:

| |
|----------------------------|
| 2½-inch Pipe X = 4 inches. |
| 3 -inch Pipe X = 4 inches. |
| 3½-inch Pipe X = 5 inches. |
| 4 -inch Pipe X = 5 inches. |
| 4½-inch Pipe X = 6 inches. |
| 5 -inch Pipe X = 6 inches. |
| 6 -inch Pipe X = 7 inches. |

| |
|-----------------------------|
| 7-inch Pipe X = 8 inches. |
| 8-inch Pipe X = 9 inches. |
| 10-inch Pipe X = 12 inches. |
| 12-inch Pipe X = 14 inches. |
| 14-inch Pipe X = 16 inches. |
| 15-inch Pipe X = 16 inches. |
| 16-inch Pipe X = 18 inches. |

These bends can be made of Extra Heavy, full weight, or of Merchant weight Pipe, as ordered.

QUARTER BEND



B65

RETURN BEND



B66

GOOSE NECK



B67

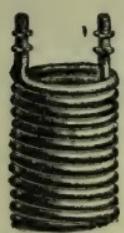
MADE OF EXTRA HEAVY PIPE

| Size..... |inches | ¾ | 1 | 1¼ | 1½ |
|--|-------------|------|---|----|-----|
| B65—Quarter Bend. Least radius the pipe can be bent | inches | .... | 2 | 3 | 4 |
| Least length center to end quarter bends can be made ..... | " | .... | 5 | 6 | 8 |
| B66—Return Bend. Least distance between centers pipe can be bent ..... | " | .... | 4 | 6 | 8 |
| Least length center to end return bends can be made ..... | " | .... | 5 | 6 | 8 |
| B67—Goose Neck. Least distance between centers pipe can be made | " | 3½ | 4 | 6 | ... |
| Least length center to end goose neck can be made | " | 5 | 5 | 6 | ... |

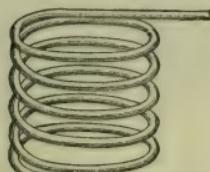
Dimensions of Wrought Bends vary so that we cannot make a list price. State SIZE, DIMENSIONS, and QUANTITY wanted, when inquiring for price.

BENT PIPE COILS**HEATER COILS**

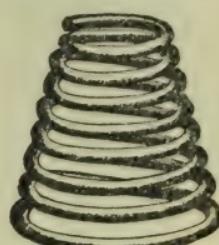
B69



B70



B71

FRUSTUM COIL

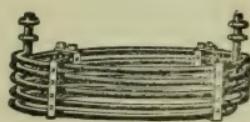
B72

FLAT COIL

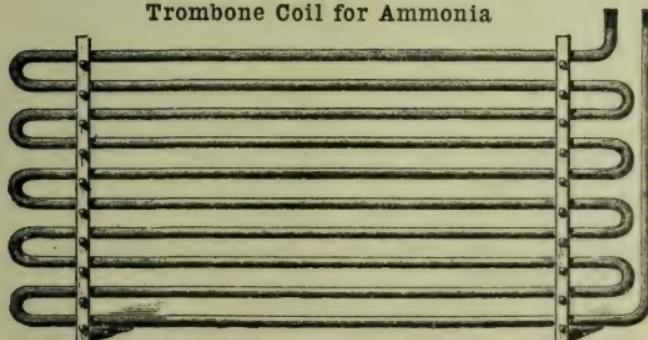
B73

KETTLE COIL

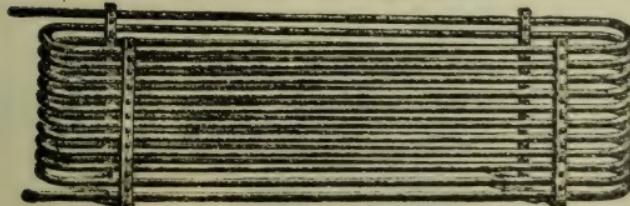
B74

TANK COIL

B75

Trombone Coil for Ammonia

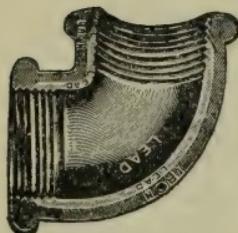
B76

Rectangular Coil for Ammonia

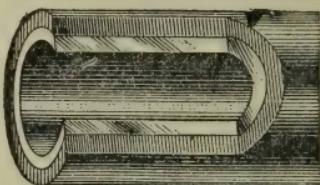
B77

Prices on application. State dimensions.

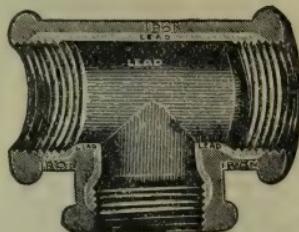
TIN-LINED AND LEAD-LINED IRON PIPE AND FITTINGS



B80



B79



B81

| Inside diameter. inches | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | 4 | 5 | 6 |
|-------------------------|---------------|-----|----------------|----------------|------|----------------|------|------|-------|-------|
| Tin-lined.....per foot | .40 | .60 | .88 | 1.10 | 1.40 | 2.00 | 2.70 | 3.80 | ..... | ..... |
| Lead-lined....." | .26 | .40 | .52 | .64 | .88 | 1.30 | 1.80 | 2.20 | 3.20 | 4.40 |

Galvanized Pipe furnished at special prices.

The Tin-lined Pipe is made by pouring melted tin into a wrought-iron pipe. While melted, the tin is inseparably united to the iron and formed into a substantial inner pipe. The Lead-lined pipe is made in the same way. As the substantial lining cannot be separated from the iron, even when bent or coiled, this composite pipe can be used successfully where tin, lead, brass, or iron pipes alone are too expensive or unsatisfactory. The lining of pipe and nipples is beaded on the end, thereby making a continuous lining when connected at every joint. The use of Tin-lined Pipe insures pure water.

For mining, manufacturing, and many other uses requiring a pipe that acids will not destroy, we furnish Lead-lined Pipe at a greatly reduced cost.

TIN-LINED AND LEAD-LINED MALLEABLE IRON FITTINGS

| Size.....inches | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | 4 |
|----------------------|---------------|-----|----------------|----------------|------|----------------|------|------|
| Elbows.....each | .26 | .36 | .60 | .80 | 1.10 | 1.40 | 3.20 | 4.60 |
| Elbows 45°....." | .30 | .46 | .60 | .90 | 1.20 | 1.40 | 3.20 | 4.60 |
| Tees....." | .34 | .50 | .70 | .90 | 1.20 | 2.40 | 3.80 | 5.00 |
| Tees, reducing....." | .44 | .64 | .90 | 1.20 | 1.60 | 2.40 | 4.00 | 5.20 |
| Couplings....." | .24 | .34 | .42 | .52 | .76 | 1.10 | 1.60 | 2.00 |

Galvanized Fittings furnished at special prices.

WE ARE ALSO PREPARED TO FURNISH

LEAD-LINED CAST-IRON SCREWED FITTINGS,

LEAD-LINED CAST-IRON SCREWED DRAINAGE FITTINGS,

LEAD-LINED FLANGED PIPE AND FITTINGS,

LEAD-LINED SOIL PIPE AND FITTINGS,

LEAD-LINED PUMP COLUMNS,

LEAD-LINED WROUGHT-IRON NIPPLES, ETC., ETC.

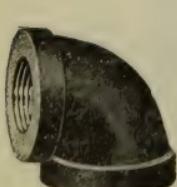
LEAD-LINED STOP COCKS, GATE VALVES, ETC.

Prices on application.

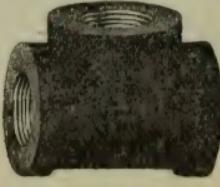
NOTE.—The Lead lining in all Flanged Pipe and Fittings is turned over on the flanges, forming a gasket, which makes it impossible for the liquid to come in contact with the iron.

ROUGH BRASS FITTINGS

Cast-Iron Pattern, Quoted on Application



B82



B83



B84

BRASS FITTINGS (IRON PIPE SIZE)**ELBOW**

B85

TEE

B86

CROSS

B87

BUSHING

B88

PLUG

B89

CAP

B90

COUPLING

B91

PRICE EACH, *ROUGH BRASS FITTINGS

*Finished Brass Fittings are Double the List Price of Rough

| Size inches | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 |
|--------------------------|---------------|---------------|---------------|---------------|---------------|-------|----------------|----------------|-------|----------------|-------|----------------|-------|
| Elbows | .12 | .17 | .21 | .28 | .35 | .50 | .85 | 1.10 | 1.50 | 3.50 | 4.50 | 7.00 | 10.00 |
| “ Reducing | .22 | .26 | .35 | .45 | | .62 | 1.10 | 1.40 | 1.90 | 4.40 | 5.65 | 8.75 | 12.50 |
| “ 45° | .25 | .30 | .40 | .50 | | .75 | 1.25 | 1.65 | 2.25 | 5.25 | 6.75 | ..... | ..... |
| “ Street | | .35 | .55 | .75 | 1.00 | 1.80 | 2.50 | 3.25 | ..... | ..... | ..... | ..... | ..... |
| “ Drop Fem | .20 | .30 | .40 | .60 | | .85 | 1.20 | 1.90 | 2.50 | ..... | ..... | ..... | ..... |
| “ Side Outl. . . . | | .30 | .40 | .60 | | .85 | 1.20 | 1.60 | ..... | ..... | ..... | ..... | ..... |
| Tees | .15 | .30 | .30 | .40 | .50 | .75 | 1.00 | 1.30 | 1.75 | 4.00 | 5.50 | 9.00 | 13.00 |
| “ Reducing | .25 | .38 | .50 | .63 | | .95 | 1.25 | 1.65 | 2.20 | 5.00 | 6.90 | 11.25 | 16.25 |
| “ Drop Fem | | .35 | .45 | .70 | 1.05 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| “ 4-Way | | | .50 | .70 | 1.00 | 1.35 | 1.80 | ..... | ..... | ..... | ..... | ..... | ..... |
| Crosses | .20 | .30 | .40 | .50 | .60 | .80 | 1.50 | 2.00 | 3.50 | 5.00 | 7.00 | 10.00 | 14.50 |
| “ Reducing | .38 | .50 | .65 | .75 | 1.00 | 1.90 | 2.50 | 4.40 | 6.25 | 8.75 | 12.50 | 18.00 | ..... |
| Bushings | .10 | .12 | .14 | .21 | | .38 | .50 | .67 | 1.00 | 1.50 | 2.50 | ..... | ..... |
| Plugs | .09 | .10 | .12 | .15 | .20 | .28 | .40 | .50 | .90 | 1.25 | 2.00 | 3.00 | 4.00 |
| Caps | .15 | .15 | .20 | .25 | .35 | .45 | .60 | .80 | 1.10 | 2.00 | 3.00 | ..... | ..... |
| Lock-nuts | .10 | .10 | .12 | .15 | .20 | .30 | .45 | .70 | .95 | 1.50 | 2.75 | ..... | ..... |
| Reducers | .16 | .22 | .32 | .45 | | .65 | .90 | 1.12 | 1.85 | 3.00 | 4.50 | ..... | ..... |
| Couplings | .10 | .14 | .16 | .25 | .37 | .50 | .60 | .90 | 1.35 | 2.40 | 3.50 | 7.00 | 7.00 |
| “ R & L | .17 | .20 | .30 | .45 | .60 | | .75 | 1.12 | 1.75 | ..... | ..... | ..... | ..... |
| Ret.Bend Close | | | .56 | .70 | 1.00 | 1.70 | 2.20 | 3.00 | ..... | ..... | ..... | ..... | ..... |
| “ “ Open | | | | .70 | .88 | 1.25 | 2.15 | 2.75 | 3.75 | ..... | ..... | ..... | ..... |

BRASS NIPPLES



Iron Pipe Size

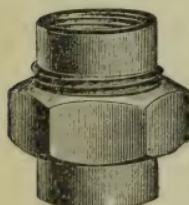


B98

B99

PRICE EACH

| Size Inches | Close | | Length, Inches | | | | | | | | | |
|----------------|------------------|-------|----------------|-----|------|------|------|------|------|------|------|------|
| | Length Inches | Price | 1½ | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 5½ | 6 |
| 1/8 | 3/4 | .16 | .16 | .19 | .22 | .25 | .28 | .31 | .34 | .37 | .40 | .43 |
| 1/4 | 7/8 | .20 | .20 | .24 | .28 | .32 | .36 | .40 | .44 | .48 | .52 | .56 |
| 3/8 | 1 | .23 | .23 | .28 | .33 | .38 | .43 | .48 | .53 | .58 | .63 | .68 |
| 1/2 | 1 1/8 | .30 | .30 | .36 | .42 | .48 | .54 | .60 | .66 | .72 | .78 | .84 |
| 5/8 | 1 3/8 | .32 | .. | .39 | .46 | .53 | .60 | .67 | .74 | .81 | .88 | .95 |
| 1 | 1 1/2 | .40 | .. | .49 | .58 | .67 | .76 | .85 | .94 | 1.03 | 1.12 | 1.21 |
| 1 1/4 | 1 5/8 | .63 | .. | .. | .75 | .87 | .99 | 1.11 | 1.23 | 1.35 | 1.47 | 1.59 |
| 1 1/2 | 1 3/4 | .74 | .. | .. | .88 | 1.02 | 1.16 | 1.30 | 1.44 | 1.58 | 1.72 | 1.86 |
| 2 | 2 | 1.00 | .. | .. | 1.19 | 1.38 | 1.57 | 1.76 | 1.95 | 2.14 | 2.33 | 2.52 |
| 2 1/2 | 2 1/2 | 1.80 | .. | .. | .. | 2.04 | 2.32 | 2.60 | 2.88 | 3.16 | 3.44 | 3.72 |
| 3 | 2 1/2 | 2.50 | .. | .. | .. | 2.80 | 3.20 | 3.60 | 4.00 | 4.40 | 4.80 | 5.20 |
| 3 1/2 | 2 3/4 | 4.00 | .. | .. | .. | .. | 5.10 | 5.68 | 6.26 | 6.84 | 7.42 | |
| 4 | 3 | 4.75 | .. | .. | .. | .. | .. | 5.86 | 6.53 | 7.20 | 7.87 | 8.54 |

STANDARD
PATTERN

B100

BRASS UNION

Ground Joint

OCTAGON
PATTERN

B101

PRICE EACH

| Size.....inch | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 1 | 1 1/4 |
|----------------------|-------|------|-------|-------|-------|-------|-------|
| *Standard Union..... | .32 | .36 | .50 | .70 | .90 | 1.25 | 1.70 |
| Octagon " Rough.... | 35 | .40 | .55 | .75 | 1.00 | 1.40 | 1.90 |
| " " Finished.. | .50 | .55 | .75 | 1.00 | 1.50 | 2.00 | 2.50 |
| Size.....inch | 1 1/2 | 2 | 2 1/2 | 3 | 3 1/2 | 4 | |
| *Standard Union..... | 2.50 | 3.60 | 6.00 | 7.75 | 15.00 | 22.50 | ... |
| Octagon " Rough.... | 2.75 | 4.00 | 6.50 | 8.50 | 13.50 | 18.50 | 32.00 |
| " " Finished .. | 3.00 | 4.50 | 7.50 | 10.00 | .... | .... | .... |

*Standard Unions are Finished (not necessarily polished).

WILLIAMS' HEAVY UNIONS, brass, ground joint, with ONE LARGE HEX. END or both ends round, take same list price as Standard Brass Unions.

SEAMLESS BRASS TUBING



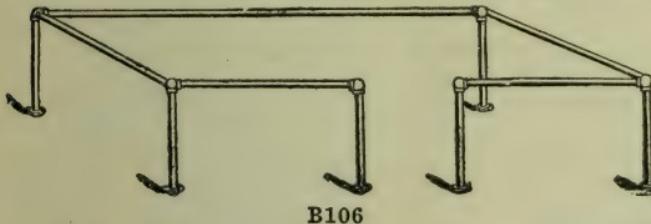
B105

***IRON PIPE SIZES—MILL LENGTHS 12 FEET**

Extras over Base Prices and Approximate Weight per Foot

| Iron Pipe Size....inches | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|--------------------------|----------------|---------------|----------------|---------------|----------------|------|----------------|----------------|-------|
| Add to Base..per pound | .08 | .07 | .02 | .01 | | | | | |
| Weight per foot..pounds | .25 | .43 | .62 | .9 | | | | | |
| | | | | | | | | | |
| Iron Pipe Size....inches | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ | 5 | 6 | 7 | 8 |
| Add to Base..per pound | | | BASE PRICE | .01 | .02 | .04 | .06 | .07 | .09 |
| Weight per foot..pounds | 5.75 | 8.3 | | 10.9 | 12.7 | 13.9 | 15.75 | 18.31 | 26.28 |
| | | | | | | | | | 29.88 |

*Other sizes not Iron Pipe Size, quoted on application.



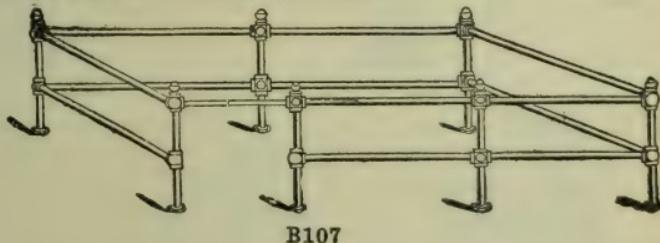
B106

To construct a railing two pipes high, the upper outlet of all fittings used in lower pipes should be tapped with left-hand thread.

See Malleable and Brass Railing Fittings next page.

As the fittings are not required to be steam or water tight,

a sufficiently clean thread, to screw up well and make a good job can be made by running a left-hand tap into any outlet tapped right hand.



B107

COUNTER
BRACKETS

B108

Each $\frac{3}{4}$ inch..50c; 1 inch..60c.

| Inches.. | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ |
|----------|---------------|-----|----------------|
| Each... | .40 | .50 | .70 |

BRASS
RAILING
CAPS

B109

RAILING FITTINGS

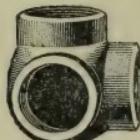
Threaded Iron Pipe Size

No. 1



B111

No. 2



B112

No. 3



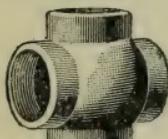
B113

No. 4



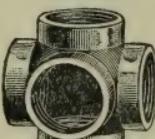
B114

No. 5



B115

No. 6



B116

No. 8



B117

No. 11



No. 7



B118

***WITH RIGHT HAND PIPE THREADS (see note)**

Black Malleable Iron

| Size..... |inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|-------------------------|-------------|---------------|---------------|-----|----------------|----------------|------|
| Elbow No. 1..... | each | .15 | .18 | .20 | .35 | .45 | .72 |
| " " 2, Side Outlet..... | " | .20 | .23 | .25 | .40 | .50 | .80 |
| Tee " 3..... | " | .20 | .23 | .25 | .40 | .50 | .75 |
| " " 4, Side Outlet..... | " | .30 | .33 | .35 | .45 | .55 | .90 |
| Cross " 5..... | " | .30 | .33 | .35 | .45 | .58 | 1.00 |
| " " 6, Side Outlet..... | " | .35 | .38 | .40 | .50 | .65 | 1.35 |
| Flange " 7..... | " | .14 | .15 | .15 | .20 | .28 | .30 |
| Acorn " 8..... | " | .16 | .18 | .20 | .25 | .35 | .90 |
| Hinge " 11..... | " | .35 | .40 | .45 | .55 | .80 | 1.00 |

In ordering these Fittings, describe kind wanted by No. and size.

*Railing Fittings are kept in stock with Right Hand Threads, a Left Hand Thread can be made in any opening by running a left hand tap in. The joint does not need to be air tight, as the fittings are used for railings only. Galvanized Fittings special to order.

Can furnish from factory with certain openings threaded left hand if preferred.

FINISHED BRASS RAILING FITTINGS

Same Patterns as Illustrated Above

| Size..... |inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|------------------|-------------|---------------|---------------|------|----------------|----------------|------|
| Elbow No. 1..... | each | .60 | .70 | .80 | 1.20 | 1.60 | 2.50 |
| " " 2..... | " | .80 | .90 | 1.10 | 1.70 | 2.00 | 3.00 |
| Tee " 3..... | " | .80 | .90 | 1.10 | 1.70 | 2.00 | 3.00 |
| " " 4..... | " | 1.20 | 1.30 | 1.50 | 2.00 | 2.40 | 3.50 |
| Cross " 5..... | " | 1.20 | 1.30 | 1.50 | 2.00 | 2.40 | 3.50 |
| " " 6..... | " | 1.40 | 1.50 | 1.70 | 2.25 | 3.00 | 4.00 |
| Flange " 7..... | " | .30 | .40 | .55 | .75 | 1.00 | 1.30 |
| Acorn " 8..... | " | 1.00 | 1.50 | 2.00 | 2.50 | 3.25 | 4.50 |
| Hinge " 11..... | " | .90 | 1.30 | 1.50 | 1.90 | 2.25 | 3.25 |

MALLEABLE 45-DEGREE RAILING FITTINGS

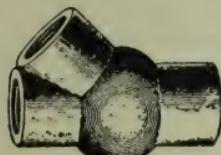
B121-A



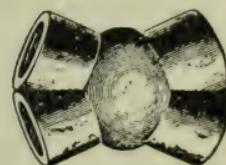
B122-B



B123-E



B124-C



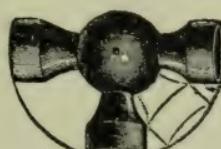
B125-D

| Size..... | inches | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 |
|-------------------------------------|--------|-----|-------|-------|------|-------|------|
| Price, B121, B122, "A" or "B" | each | .40 | .70 | .90 | 1.44 | 2.00 | 3.00 |
| Same, with Side Outlet..... | " | .50 | .80 | 1.00 | 1.60 | 2.30 | 3.40 |
| Price, B124 "C"..... | " | .50 | .80 | 1.00 | 1.60 | 2.40 | 3.80 |
| Same, with Side Outlet..... | " | .70 | .90 | 1.10 | 1.80 | 2.80 | 4.30 |
| Price, B125 "D"..... | " | .70 | .90 | 1.16 | 2.00 | 3.00 | 4.50 |
| Same, with Side Outlet..... | " | .80 | 1.00 | 1.30 | 2.70 | 3.50 | 5.20 |
| Price, B123 "E" | " | .30 | .40 | .56 | .60 | 1.00 | 1.50 |

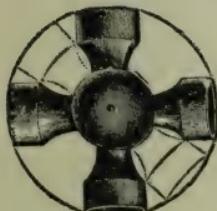
Fittings tapped left hand or right and left, will be charged at special prices.

ADJUSTABLE RAILING FITTINGS

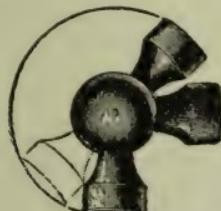
B131. ELL



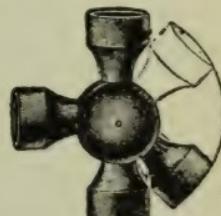
B132. TEE



B133. CROSS



B134. STAIR TEE



B135. STAIR CROSS

PLAIN IRON FITTINGS FINISHED BRASS FITTINGS

| Size.....inches | 1 | 1 1/4 | 1 1/2 | 2 | Size.....inches | 1 | 1 1/4 | 1 1/2 | 2 |
|-----------------|------|-------|-------|------|-----------------|------|-------|-------|------|
| B131.....each | 1.10 | 1.25 | 1.70 | 2.25 | B131.....each | 2.75 | 3.15 | 4.25 | 5.65 |
| B132....." | 1.30 | 1.50 | 2.00 | 2.50 | B132....." | 3.25 | 3.75 | 5.00 | 6.25 |
| B133....." | 1.50 | 1.75 | 2.35 | 2.75 | B133....." | 3.75 | 4.40 | 5.90 | 6.90 |
| B134....." | 1.30 | 1.60 | 2.15 | 2.50 | B134....." | 3.25 | 4.00 | 5.40 | 6.25 |
| B135....." | 1.50 | 1.85 | 2.50 | 2.75 | B135....." | 3.75 | 4.65 | 6.25 | 6.90 |

By means of these Fittings, almost any angle may be obtained in Railings for stairs and other places requiring a deviation from horizontal or perpendicular lines, which would otherwise require special patterns to attain the same results.

LIST OF SIZES OF MALLEABLE IRON FITTINGS

Known by the manufacturers as stock sizes. All are not kept in stock made up, but can be cast from patterns on hand at the factory.

Other Sizes can be furnished at special net prices, depending on quantity ordered.

We have in our stock, all the sizes and patterns for which there is sufficient demand to justify us in carrying—and can furnish all the common sizes promptly—other sizes we can ship direct from the factory.

*Indicates regular **Galvanized Sizes**, others can be furnished if desired.

Beaded Fittings are marked B.

Plain Fittings are marked P.

Some patterns are made both beaded and plain.

| ELBOWS | | Size | Size | Size |
|--------------------------|-----------|---------------|---------|-----------------------------|
| P..... | Size | *B-P.....2 | 1½ x 1 | P.....1½ x 1½ x 1 |
| P..... | 1/8 | B.....2½ x 1½ | 1½ | *P.....1½ x 1½ x 1 |
| P..... | 1/4 x 1/8 | B.....2½ x 2 | 1½ x 1½ | *P.....1½ x 1½ x 1 |
| *B-P..... | 1/4 | *B.....2½ | 1½ | P.....2 |
| P..... | 1/4 x 1/8 | B.....3 x 2 | 2 x 1½ | DROP |
| *B-P..... | 1/4 | B.....3 x 2½ | 2 | ELBOWS |
| P..... | 1/4 x 1/4 | *B.....3 | 2½ | Female |
| *B-P..... | 1/4 | B.....3½ x 3 | | Size Drop |
| P..... | 1/4 x 1/4 | B.....3½ | | P.....1/4 x 1/4 |
| *B-P..... | 1/4 x 1/4 | B.....4 x 3 | | P.....1/4 x 1/4 |
| *B-P..... | 1/4 x 1/4 | B.....4 x 3½ | | *P.....1/4 x 1/4 |
| *B-P..... | 1/4 x 1/4 | *B.....4 | | *P.....1/4 x 1/4 |
| *B-I..... | 1/4 x 1/4 | B.....4½ | | *P.....1/4 x 1/4 |
| *B-P..... | 1/4 x 1/4 | B.....5 | | *P.....1/4 x 1/4 |
| B-P..... | 1 x 1/4 | B.....6 | | Short Male and |
| *B-P..... | 1 x 1/4 | | | Female. |
| *B-P..... | 1 x 1/4 | | | Size. Drop. |
| *B-P..... | 1 x 1/4 | | | *P.....1/4 x 1/4 |
| *B-P..... | 1 x 1/4 | | | *P.....1/4 x 1/4 |
| | | | | P.....1/2 x 1/2 |
| STREET ELBOWS | | | | With Drop 2½ Inches Long |
| Male and Female Screw | | Size | | Size. Drop. |
| *B-P..... | 1/4 x 1/4 | B.....1/4 | | *P.....1/4 x 1/4 |
| *B-P..... | 1/4 x 1/4 | *B.....1/4 | | *P.....1/4 x 1/4 |
| *B-P..... | 1/4 x 1/4 | B.....1/2 | | P.....1/2 x 1/2 |
| *B-P..... | 1/2 x 1 | *B.....1/2 | | |
| *B-P..... | 1/2 x 1 | B.....1/2 | | |
| *B-P..... | 1/2 x 1 | *B.....1/2 | | |
| B-P..... | 2 x 1 | *B.....1/4 | | |
| B-P..... | 2 x 1 | *B.....1 | | |
| *B-P..... | 2 x 1 | *B.....1 | | |

45° FIBROWS.

Size..... Inches, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $1\frac{1}{8}$, $1\frac{1}{4}$, $1\frac{1}{2}$, $2\frac{1}{8}$, $2\frac{1}{4}$, 3 , $3\frac{1}{8}$, 4 , $4\frac{1}{8}$, 5 , 6 ,
 $1\frac{1}{4}$ inch and $1\frac{1}{2}$ inch and 2 inch can also be furnished Plain, not Beaded.

Such sizes as are marked with a * can be furnished Galvanized at regular price for Galvanized.

TEES

In describing Tees the run is first named, then the outlet, thus: $\frac{1}{2}$ T $\frac{3}{8}$ = $\frac{1}{2}$ x $\frac{3}{8}$ x $\frac{3}{4}$

Y BENDS

| | | | |
|------------------------------------|----------------|---|----------------|
| $1\frac{1}{2}$ | $1\frac{1}{4}$ | $1\frac{1}{2}$ | $1\frac{1}{2}$ |
| | | | |
| $1\frac{1}{2}$ | | 2 | |
| $1\frac{1}{2} \times 1\frac{1}{4}$ | | $2 \times 1\frac{1}{2} \times 1\frac{1}{2}$ | |

Read bottom of run first, then the top, and last the branch.

Black or Galvanized.

Size

| | |
|--------|---|
| B..... | 1 |
| B-P .. | $1\frac{1}{2}$ |
| B-P .. | $1\frac{1}{4}$ |
| B-P .. | $1\frac{1}{2} \times 1\frac{1}{4}$ |
| B-P .. | 2 |
| B-P .. | $2 \times 1\frac{1}{2} \times 1\frac{1}{2}$ |
| B-P .. | $2 \times 1\frac{1}{4}$ |
| B-P .. | $2 \times 1\frac{1}{2}$ |
| B-P .. | $2\frac{1}{2}$ |
| B..... | $2\frac{1}{2} \times 2$ |
| B..... | 3 |
| B..... | $3 \times 2\frac{1}{2}$ |
| B..... | 4 |

CAPS.

$\frac{3}{4}$ -inch and smaller are without Bead

All sizes, $\frac{1}{4}$ -inch to 4-inch.
Also Galvanized, $\frac{1}{4}$ -inch to 1-inch.

"Y"**BRANCHES.**

All sizes, 1-inch to 4-inch.

Straight, not reducing, black and Galvanized.

COUPLINGS

Right and Left
Sizes, $\frac{1}{4}$ -inch to 2-inch.

Black and Galvanized.

Right Hand

Sizes, $\frac{1}{4}$ -inch to 2-inch.

Black and Galvanized.

LOCK NUTS

Sizes, $\frac{1}{4}$ -inch to 2-inch.
Black and Galvanized.

WASTE NUTS

Sizes, $\frac{1}{4}$ -inch to 1 $\frac{1}{4}$ -inch.
Black and Galvanized.

CHANDELIER HOOKS

Male or Female
Black, $\frac{3}{8}$ -inch and $\frac{1}{2}$ -inch.

Right Hand.

WALL PLATES

$\frac{3}{8}$ and $\frac{1}{2}$ Inch

EXTENSION PIECES

Male and Female
 $*\frac{3}{8}$ -inch, $*\frac{1}{2}$ -inch and $*\frac{3}{4}$ -inch.

RETURN BENDS

Close Pattern
Dist. between Centers

| | | |
|------------------|---------------|----------------|
| * | $\frac{1}{2}$ | 1 |
| * | $\frac{3}{4}$ | $1\frac{1}{4}$ |
| *1 | | $1\frac{1}{2}$ |
| * $1\frac{1}{4}$ | | $1\frac{5}{8}$ |
| * $1\frac{1}{2}$ | | $2\frac{3}{8}$ |
| *2 | | $2\frac{5}{8}$ |

Medium Pattern
Dist. between Centers

| | | |
|------------------|---------------|----------------|
| * | $\frac{1}{2}$ | $1\frac{1}{2}$ |
| * | $\frac{3}{4}$ | $1\frac{1}{4}$ |
| *1 | | $1\frac{5}{8}$ |
| * $1\frac{1}{4}$ | | $2\frac{1}{4}$ |
| * $1\frac{1}{2}$ | | $2\frac{1}{2}$ |
| *2 | | 3 |

Open Pattern.

| | |
|------------------|----------------|
| Size | Centers |
| * | $1\frac{1}{2}$ |
| * | 2 |
| *1 | $2\frac{1}{2}$ |
| * $1\frac{1}{4}$ | 3 |
| * $1\frac{1}{2}$ | $3\frac{1}{2}$ |
| *2 | 4 |
| * $2\frac{1}{2}$ | $4\frac{1}{2}$ |
| *3 | 5 |

Galvanized Malleable Iron Unions, $\frac{1}{4}$ -inch to 4-inches.

Such sizes as are marked with a * can be furnished **Galvanized** at regular price for Galvanized.

New Patterns and Sizes are being added constantly at the factory, and we can generally furnish any size desired on special order, although the size may not be listed on the preceding pages.

**APPROXIMATE WEIGHTS
OF 10 MALLEABLE IRON FITTINGS**
In Pounds and Decimal Fractions

| Size | Inch | 1/8 | 1/4 | 3/8 | 1/2 | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 |
|-------------------------|------|-----|-----|-----|-----|-----|-----|-------|-------|----|
| Ells | | .6 | 1 | 1.8 | 2.6 | 5 | 7.7 | 11 | 13 | 22 |
| Street Ells..... | ... | 1.5 | 1.8 | 2.8 | 5 | 8 | 11 | 16 | 26 | |
| 45° Ells | ... | ... | ... | 2.5 | 4 | 5.5 | 9 | 12 | 18 | |
| 3-Way Ells | ... | ... | 1.7 | 3 | 3.5 | 6 | 12 | 16 | ... | |
| Tees..... | 1 | 1.3 | 2 | 3 | 6.5 | 8.5 | 14 | 17 | 27 | |
| Tees, 4-Way | ... | ... | ... | 3 | 4 | 10 | 13 | 16 | ... | |
| Crosses | ... | 1.6 | 2.5 | 3.2 | 7 | 10 | 16 | 20 | 29 | |
| Drop Ells, Female | ... | 1.6 | 1.8 | 2.7 | 4 | 5.5 | ... | ... | ... | |
| Drop Ells, Short Shank | 1.7 | 1.6 | 2 | 3.5 | ... | ... | ... | ... | ... | |
| Drop Ells, Long Shank | ... | 2.5 | 2.8 | ... | ... | ... | ... | ... | ... | |
| Drop Tees, Female | ... | 2 | 2 | 2.8 | 6 | ... | ... | ... | ... | |
| Drop Tees, Short Shank | ... | 2 | 2 | 2.8 | 3.2 | 6 | ... | ... | ... | |
| Reducing Couplings ... | ... | .6 | 1.2 | 1.5 | 2.4 | 3.5 | 6.5 | 8.5 | 14 | |
| Right & Left Couplings | ... | .8 | 1.3 | 2.1 | 3 | 5.5 | 8 | 12 | 17 | |
| Lock Nuts | ... | .4 | .6 | .8 | 1.3 | 1.8 | 3 | 3.5 | 5 | |
| Waste | ... | .5 | .7 | 1 | 1.3 | 1.5 | ... | ... | ... | |
| Wall Plates | ... | ... | 1.5 | ... | ... | ... | ... | ... | ... | |
| Chand. Hooks | ... | ... | 2 | 2.8 | ... | ... | ... | ... | ... | |
| Return Bends, Open... | ... | ... | 2.2 | 4.2 | 8.2 | 14 | 20 | 32 | 56 | |
| Return Bends, Close... | ... | ... | 2 | 3.5 | 7 | 10 | 17 | 25 | 40 | |
| Y Bends | ... | ... | ... | ... | ... | 12 | 19 | 28 | 44 | |

**MALLEABLE IRON FITTINGS
CLASSIFICATION AND LIST**

Adopted June 5, 1907

Price List of Stock Sizes. Other Sizes at Special Prices

| Class..... | A | B | *C |
|-------------------------------|--|--|---------------------------|
| Black..... per pound | 40 | 20 | 12 |
| Galvanized.... " | 50 | 28 | 19 |
| Elbows..... | $\left\{ \begin{array}{l} \frac{1}{8} \times \frac{1}{8} \\ \frac{1}{4} \times \frac{1}{8} \\ \frac{3}{8} \times \frac{1}{8} \end{array} \right\}$ | $\left\{ \begin{array}{l} \frac{3}{8} \times \frac{1}{4} \\ \frac{1}{2} \times \frac{1}{4} \\ \frac{1}{4}, \frac{3}{8}, \frac{1}{2} \\ \frac{1}{2} \times \frac{3}{8} \\ \frac{1}{2}, \frac{3}{4}, 1 \end{array} \right\}$ | $\frac{3}{4}$ and larger |
| " R. & L..... | $\frac{1}{4}, \frac{3}{8}$ | 2 and smaller | $1\frac{1}{4}$ and larger |
| " 45° | | $\frac{1}{4}$ to $1x\frac{3}{4}$ inclusive | $2\frac{1}{2}$ and larger |
| " Street..... | | all sizes | 1 and larger |
| " Side Outlet..... | | all sizes | |
| " Drop..... | | all sizes | |
| Tees..... | $\left\{ \begin{array}{l} \frac{1}{8} \times \frac{1}{8} \\ \frac{1}{8} \times \frac{1}{4} \\ \frac{1}{4} \times \frac{1}{8} \\ \frac{3}{8} \times \frac{1}{8} \end{array} \right\}$ | $\left\{ \begin{array}{l} \frac{1}{4}, \frac{3}{8}, \frac{1}{2} \\ \frac{1}{4} \times \frac{3}{8} \\ \frac{3}{8} \times \frac{1}{4} \times \frac{1}{4} \\ \frac{3}{8} \times \frac{3}{8} \times \frac{1}{4} \\ \frac{3}{8} \times \frac{1}{4} \times \frac{3}{8} \\ \frac{1}{2} \text{ reducing} \end{array} \right\}$ | $\frac{3}{4}$ and larger |
| " Four Way | | all sizes | |
| " Drop | | all sizes | |
| " Service | | $\left\{ \begin{array}{l} \frac{1}{2}, \frac{3}{4} \\ 1 \times \frac{3}{4} \times 1 \end{array} \right\}$ | 1 and larger |
| Crosses | | $\frac{1}{4}$ to 1 inclusive | $1\frac{1}{4}$ and larger |
| " Reducing | | 1 and smaller | $1\frac{1}{4}$ and larger |
| Return Bends..... | | $\frac{3}{8}$ to 1 inclusive | $1\frac{1}{4}$ and larger |
| " " R. & L..... | $\frac{3}{8}, \frac{1}{2}$ | $\frac{3}{4}$ and larger | |
| Couplings, R. H..... | | $\frac{3}{8}$ to $\frac{3}{4}$ inclusive | 1 and larger |
| " R. & L..... | | $\frac{3}{8}$ to $\frac{3}{4}$ inclusive | 1 and larger |
| " Reducing | $\left\{ \begin{array}{l} \frac{1}{4} \times \frac{1}{8} \\ \frac{3}{8} \times \frac{1}{8} \end{array} \right\}$ | $\left\{ \begin{array}{l} \frac{3}{8} \times \frac{1}{4} \text{ to } \\ 1 \times \frac{3}{4} \text{ inclusive} \end{array} \right\}$ | $1\frac{1}{4}$ and larger |
| Caps..... | | $\frac{1}{4}$ to 1 inclusive | $1\frac{1}{4}$ and larger |
| Locknuts..... | | $\frac{1}{4}$ to $1\frac{1}{4}$ inclusive | $1\frac{1}{2}$ and larger |
| Extension Pieces | | all sizes | |
| Waste Nuts..... | | all sizes | |
| Chandelier Hooks | | all sizes | |
| " Loops | | all sizes | |
| Wall Plates..... | | all sizes | |
| Y Bends, 45°..... | | all sizes | |
| Pump Rod Sockets..... | $\frac{3}{8}, \frac{3}{8} \times \frac{7}{16}, \frac{7}{16}$ | $\frac{1}{2}$ | |

*Such fittings in Class C as have one or more openings smaller than $\frac{3}{4}$ to be Class B.

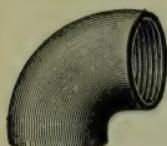
The run of tees gives the sizes for the purpose of classification; the outlet being larger does not change it.

In ordering be particular to state whether beaded or plain.

An extra charge will be made for fittings not enumerated in standard list.

MALLEABLE IRON FITTINGS

ELBOW, PLAIN



B141

ELBOW, BEADED



B142

45° ELBOW, BEADED



B143

ELBOWS. PRICE EACH

| Size | inches | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | 5 | 6 |
|-------------------|--------|---------------|---------------|---------------|---------------|---------------|-----|----------------|----------------|-------|----------------|-------|----------------|-------|-------|-------|
| Black, Right H... | .04 | .04 | .06 | .10 | .15 | .22 | .25 | .35 | .50 | .80 | 1.50 | 2.25 | 3.00 | 4.00 | 5.00 | 5.00 |
| " R. and L... | .05 | .07 | .12 | .17 | .25 | .30 | .40 | .65 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Galv. Right H... | .05 | .08 | .14 | .20 | .32 | .40 | .60 | .90 | 1.35 | 2.60 | 3.75 | 5.00 | ..... | ..... | ..... | ..... |

45° ELBOWS. PRICE EACH

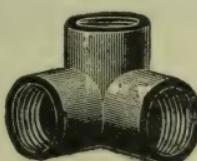
| Size ...in. | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | 5 | 6 | |
|-------------|---------------|---------------|---------------|---------------|-----|----------------|----------------|------|----------------|------|----------------|------|-------|-------|-------|
| Black | .08 | .10 | .12 | .18 | .26 | .36 | .54 | .82 | 1.25 | 2.50 | 3.25 | 4.50 | 6.00 | 7.50 | ..... |
| Galv..... | .12 | .15 | .20 | .25 | .40 | .50 | .85 | 1.35 | 1.90 | 3.75 | ..... | 6.75 | ..... | ..... | ..... |

STREET ELBOW



B144

SIDE-OUTLET ELBOW



B145

DROP ELBOW, FEMALE



B146

ELBOWS. PRICE EACH

| Size | in. | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ |
|---------------------------------|-----|---------------|---------------|---------------|---------------|-------|----------------|----------------|-------|----------------|
| Street Elbows, Black..... | | .10 | .10 | .12 | .20 | .25 | .40 | .55 | .90 | 1.50 |
| " " Galvanized... | | .12 | .12 | .15 | .28 | .35 | .55 | .80 | 1.30 | ..... |
| Side-Outlet Elbows, Black | | | .08 | .10 | .18 | .30 | .45 | .60 | 1.00 | ..... |
| Drop Elbows, Black | | .06 | .08 | .12 | .20 | ..... | ..... | ..... | ..... | ..... |
| " " Galvanized | | | .12 | .20 | .35 | ..... | ..... | ..... | ..... | ..... |

DROP ELBOW

Flange Right Side



B147

DROP ELBOW

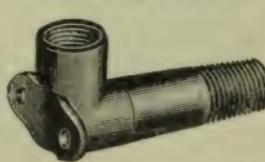
Flange Left Side



B148

LONG DROP ELBOW

Male and Female

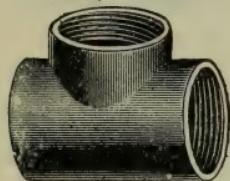


B149

Sizes, $\frac{3}{8} \times \frac{3}{8}$ or $\frac{1}{4} \times \frac{3}{8}$. B147 and 148: Black, 8c. each. B149: Black, 10c., Galvanized, 18c. each.

MALLEABLE IRON FITTINGS

TEE, PLAIN



B151

TEE, BEADED



B152

SERVICE TEE



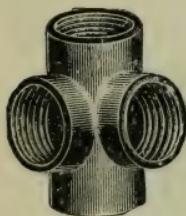
B153

TEES, PRICE EACH

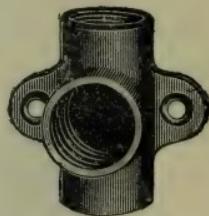
| Size, in. | $\frac{1}{8}$ - $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ | 5 | 6 |
|-----------|-------------------------------|---------------|---------------|---------------|-----|----------------|----------------|------|----------------|------|----------------|------|----------------|------|------|
| Black... | .07 | .08 | .11 | .15 | .25 | .30 | .45 | .60 | 1.05 | 1.70 | 2.50 | 3.40 | 4.25 | 5.00 | 7.00 |
| Galv.... | .09 | .10 | .16 | .20 | .38 | .50 | .70 | 1.00 | 1.90 | 3.00 | 4.25 | 5.75 | .... | .... | .... |

SERVICE TEES

| | | | | | | | | |
|-------------------------|--------|---------------|---------------|-----|----------------|----------------|------|----------------|
| Size | inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ |
| Price, Black | each | .15 | .25 | .35 | .50 | .75 | 1.15 | 2.00 |
| Price, Galvanized | " | .20 | .35 | .50 | .70 | 1.10 | 1.65 | .... |

FOUR-WAY
TEE

B154

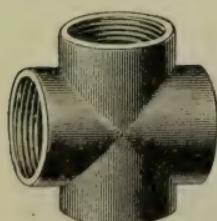
DROP TEE,
FEMALE

B155

| Size | inches | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|---------------------------|--------|---------------|---------------|---------------|---------------|------|----------------|----------------|------|
| Four-Way Tees, Black... | each | .... | .12 | .14 | .20 | .35 | .50 | .80 | 1.25 |
| Drop Tees..... | " | .08 | .10 | .14 | .22 | .30 | .... | .... | .... |
| Drop Tees, Galvanized .. | " | .... | .15 | .25 | .40 | .55 | .... | .... | .... |
| Drop Tees, Long, Black .. | " | .... | .12 | .... | .... | .... | .... | .... | .... |

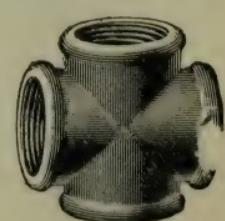
CROSSES

PLAIN



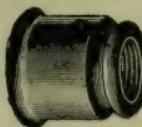
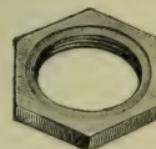
B156

BEADED



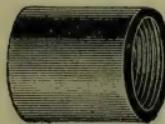
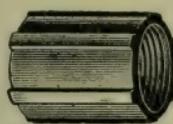
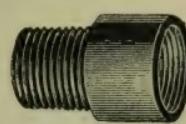
B157

| Size .. inches | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 |
|----------------|---------------|---------------|---------------|---------------|-----|----------------|----------------|------|----------------|------|----------------|------|
| Black .. each | .08 | .10 | .12 | .20 | .30 | .40 | .60 | 1.00 | 1.75 | 3.00 | 3.25 | 5.25 |
| Galv... " | ... | .15 | .17 | .25 | .45 | .60 | .90 | 1.50 | 2.75 | 4.50 | 5.00 | 8.00 |

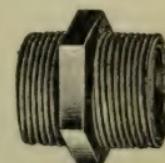
MALLEABLE IRON FITTINGS**Y-BRANCH****B160****REDUCING COUPLING****B161****CAP****LOCKNUT****B163**

| Size.....inches | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 |
|--------------------------|---------------|---------------|---------------|---------------|-----|----------------|----------------|------|----------------|------|----------------|------|
| Y-Branch, Black, ea. | .... | .... | .25 | .40 | .60 | .80 | 1.00 | 1.70 | 2.00 | 4.00 | .... | .... |
| Y-Branch, Galv. " | .... | .... | .38 | .60 | .90 | 1.25 | 1.50 | 2.50 | 3.00 | 6.00 | .... | .... |
| Red'g Couplings, Blk. " | .03 | .03 | .05 | .10 | .16 | .20 | .28 | .45 | .70 | 1.00 | 1.50 | 1.85 |
| Red'g Couplings, Galv. " | .. | .05 | .08 | .15 | .25 | .35 | .45 | .75 | 1.05 | 1.65 | 2.40 | 3.05 |
| Caps, Black..... | .03 | .04 | .05 | .08 | .12 | .16 | .24 | .32 | .45 | .85 | 1.00 | 1.20 |
| Caps, Galv..... " | .04 | .05 | .08 | .12 | .17 | .24 | .38 | .52 | .76 | 1.30 | 1.60 | 2.00 |
| Locknut, Black, | .02 | .03 | .04 | .05 | .07 | .09 | .11 | .18 | .40 | .50 | .... | .... |
| Locknut, Galv... " | .03 | .04 | .05 | .07 | .10 | .14 | .20 | .30 | .55 | .70 | .... | .... |

R. H. COUPLING R. and L. COUPLING EXTENSION PIECE WASTE NUT

**B164****B165****B166****B167**

| Size..... | inches | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|--------------------------------------|--------|---------------|---------------|---------------|---------------|-----|----------------|----------------|-----|
| R. H. Coupling, Black..... | each | .03 | .04 | .07 | .10 | .14 | .20 | .25 | .35 |
| R. H. Coupling, Galvanized | " | .05 | .07 | .10 | .17 | .23 | .30 | .40 | .55 |
| R. and L. Coupling, Black..... | " | .04 | .05 | .08 | .12 | .16 | .25 | .36 | .52 |
| R. and L. Coupling, Galvanized | " | .06 | .08 | .10 | .17 | .25 | .35 | .55 | .75 |
| Extension Piece, Black | " | .. | .06 | .09 | .12 | .. | .. | .. | .. |
| Extension Piece, Galvanized | " | .. | .09 | .13 | .18 | .. | .. | .. | .. |
| Waste Nut, Black..... | " | .04 | .05 | .06 | .08 | .10 | .. | .. | .. |
| Waste Nut, Galvanized.... | " | .08 | .10 | .12 | .16 | .20 | .. | .. | .. |

WALL PLATE**CHANDELIER
HOOK, FEMALE****B169****CHANDELIER LOOP****B170****HEXAGON
NIPPLE****B171**

| Size..... | inches | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|--|--------|---------------|---------------|---------------|---------------|-----|----------------|----------------|-----|
| Waste Nut, Black..... | each | .04 | .05 | .06 | .08 | .10 | .. | .. | .. |
| Waste Nut, Galvanized | " | .08 | .10 | .12 | .16 | .20 | .. | .. | .. |
| Wall Plate, Black..... | " | .. | .12 | .. | .. | .. | .. | .. | .. |
| Hooks and Loops, Black..... | " | .. | .10 | .12 | .. | .. | .. | .. | .. |
| Hexagon, Right and Left Nipple, Black..... | " | .. | .. | .. | .25 | .30 | .40 | .50 | .70 |

MALLEABLE IRON FITTINGS



B172 Closed

RETURN
BENDS

B173 Open

CLOSE PATTERN

| Size..... | inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | $1\frac{1}{2}$ | 2 |
|------------------------|--------|---------------|----------------|----------------|----------------|-----------------|----------------|----------------|
| R. H., Black..... | each | .13 | .25 | .35 | .50 | .75 | | 1.00 |
| R. H., Galvanized..... | " | .25 | .35 | .55 | .75 | 1.15 | | 1.65 |
| R. and L., Black..... | " | .15 | .30 | .45 | .60 | .90 | | 1.25 |
| L. H., Black..... | " | .15 | .30 | .45 | .60 | .90 | | 1.25 |
| Center to Center..... | inches | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | $1\frac{1}{4}$ | $2\frac{3}{16}$ | | $2\frac{1}{8}$ |

OPEN PATTERN

| Size..... | inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|------------------------|--------|----------------|---------------|----------------|----------------|----------------|------|----------------|------|
| R. H., Black..... | each | .15 | .30 | .50 | .65 | .85 | 1.25 | 2.00 | 3.00 |
| R. H., Galvanized..... | " | .25 | .45 | .70 | .90 | 1.25 | 2.00 | 3.50 | 5.00 |
| R. and L., Black..... | " | .20 | .38 | .60 | .80 | 1.05 | 1.55 | 2.50 | 3.75 |
| L. H., Black..... | " | .20 | .38 | .60 | .80 | 1.05 | 1.55 | 2.50 | 3.75 |
| Center to Center..... | inches | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ | 5 |

MEDIUM PATTERN—NOT ILLUSTRATED

| Size..... | inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $1\frac{1}{2}$ | 2 |
|------------------------|--------|----------------|----------------|----------------|----------------|----------------|---|----------------|---|
| R. H., Black..... | each | .13 | .25 | .35 | .50 | .75 | | 1.00 | |
| R. H., Galvanized..... | " | .25 | .35 | .55 | .75 | 1.15 | | 1.65 | |
| R. and L., Black..... | " | .15 | .30 | .45 | .60 | .90 | | 1.25 | |
| L. H., Black..... | " | .15 | .30 | .45 | .60 | .90 | | 1.25 | |
| Center to Center..... | inches | $1\frac{1}{4}$ | $1\frac{1}{2}$ | $1\frac{1}{8}$ | $2\frac{1}{4}$ | $2\frac{1}{2}$ | | $2\frac{1}{2}$ | 3 |

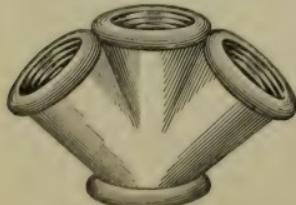
SPECIAL WIDE PATTERN—RIGHT HAND
NOT ILLUSTRATED

| Size | inches | $\frac{3}{8}$ | $\frac{3}{4}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | 3 | 3 | 4 | 6 |
|------------------------|--------|----------------|---------------|---------------|------|----------------|----------------|------|----------------|------|------|-------|
| Black | each | .25 | 1.00 | 1.25 | 1.25 | 1.25 | 2.00 | 3.00 | 5.00 | 5.00 | 8.00 | 16.00 |
| Galvanized | " | .30 | 1.35 | 1.65 | 1.70 | 1.70 | 2.75 | 4.00 | 6.50 | 6.50 | ... | ... |
| Center to Center | in. | $1\frac{1}{2}$ | 4 | 6 | 6 | 6 | 6 | 5 | $7\frac{1}{2}$ | 8 | 6 | 12 |

EXTRA HEAVY—NOT ILLUSTRATED

| Size | inches | 1 | 1 | $1\frac{1}{2}$ | 2 | 2 | 2 |
|------------------------|--------|----------------|----------------|----------------|---|----------------|----------------|
| Center to Center | inches | $1\frac{1}{4}$ | $2\frac{1}{4}$ | 5 | 3 | $3\frac{1}{4}$ | $3\frac{3}{4}$ |

Prices on application.



B174

DOUBLE Y BRANCH

Size 1 to 3-inch.
Black and Galvanized.
For factory shipment.
Prices quoted on application.
State quantity wanted.

MALLEABLE IRON FITTINGS**BUSHING**

B175

FACED BUSHING

B176

Bushings 2-inch and smaller reducing one size only are Malleable Iron

For other sizes see Cast-Iron Fittings, B198.

| Size..... | inches | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ |
|-----------------------------|--------|---------------|---------------|---------------|---------------|-----|----------------|----------------|-----|----------------|
| Bushings, Plain.... | each | .04 | .04 | .04 | .05 | .06 | .07 | .09 | .14 | .21 |
| Bushings Galvanized, | " | .08 | .08 | .08 | .10 | .12 | .14 | .18 | .28 | .42 |
| Faced Bushings, Plain ..... | " | ..... | .08 | .09 | .11 | .13 | .17 | .22 | .32 | .48 |

MALLEABLE OFFSET REDUCER

B177

| Size inches | $1\times\frac{3}{4}$ | $1\frac{1}{4}\times 1$ | $1\frac{1}{2}\times 1\frac{1}{4}$ | $2\times 1\frac{1}{2}$ | $2\frac{1}{2}\times 2$ | $3\times 2\frac{1}{2}$ | $3\frac{1}{2}\times 3$ | 4×3 | 5×4 |
|-------------|----------------------|------------------------|-----------------------------------|------------------------|------------------------|------------------------|------------------------|-------------|-------------|
| Price each | .60 | .70 | .90 | 1.10 | 1.80 | 2.50 | 3.00 | 4.00 | 6.00 |



B178

CROSS OVER

| Size..... | inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 |
|-----------------|--------|---------------|---------------|-----|
| Black..... | each | .20 | .30 | .45 |
| Galvanized..... | " | .25 | .40 | .60 |



B179

CROSS OVER - With Back Outlet

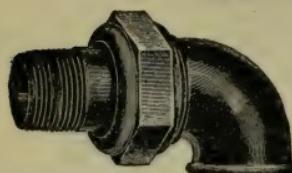
| Size..... | inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 |
|-----------------|--------|---------------|---------------|-----|
| Black..... | each | .30 | .35 | .65 |
| Galvanized..... | " | .40 | .55 | .95 |



B180

CROSS OVER TEE

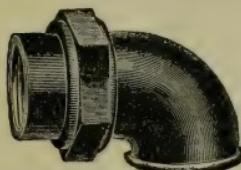
| Size..... | inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 |
|-----------------|--------|---------------|---------------|------|
| Black..... | each | .35 | .45 | .75 |
| Galvanized..... | " | .55 | .70 | 1.15 |

MALLEABLE IRON FITTINGS**UNION ELLS**

Male and Female

B185

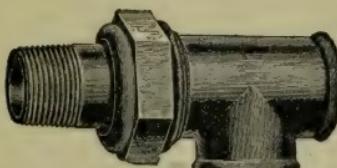
| Size..... | inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ |
|-----------------|--------|---------------|---------------|------|----------------|----------------|------|----------------|
| Black..... | each | .48 | .62 | .72 | 1.05 | 1.20 | 1.80 | 3.30 |
| Galvanized..... | " | .72 | .93 | 1.08 | 1.60 | 1.80 | 2.70 | 4.95 |

**UNION ELLS**

Female

B186

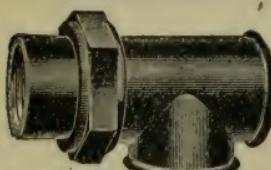
| Size..... | inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ |
|-----------------|--------|---------------|---------------|-----|----------------|----------------|------|----------------|
| Black..... | each | .42 | .54 | .63 | .90 | 1.05 | 1.55 | 2.85 |
| Galvanized..... | " | .63 | .81 | .95 | 1.35 | 1.58 | 2.35 | 4.30 |

**UNION TEES**

Male and Female

B187

| Size..... | inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ |
|-----------------|--------|---------------|---------------|------|----------------|----------------|------|----------------|
| Black..... | each | .52 | .65 | .80 | 1.10 | 1.30 | 1.95 | 3.70 |
| Galvanized..... | " | .78 | 1.00 | 1.20 | 1.65 | 1.95 | 2.95 | 5.55 |

**UNION TEES**

Female

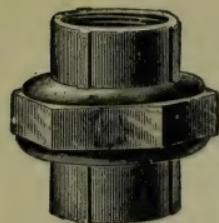
B188

| Size..... | inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ |
|-----------------|--------|---------------|---------------|------|----------------|----------------|------|----------------|
| Black..... | each | .45 | .57 | .70 | .95 | 1.15 | 1.70 | 3.20 |
| Galvanized..... | " | .68 | .86 | 1.05 | 1.45 | 1.75 | 2.55 | 4.80 |

KEWANEE UNION ELLS AND TEES

Similar to above, except body is of brass, with ground joint iron union.

| Size | inches | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ |
|--------------------|--------------|---------------|---------------|---------------|---------------|------|----------------|----------------|------|----------------|
| Ell, Male and Fem. | Black .. ea. | .30 | .50 | .75 | .95 | 1.10 | 1.60 | 1.80 | 2.70 | 5.00 |
| | Galv. .. " | .40 | .65 | 1.10 | 1.40 | 1.65 | 2.40 | 2.70 | 4.00 | 7.50 |
| Ell, Female..... | Black .. " | .25 | .45 | .65 | .85 | 1.00 | 1.35 | 1.60 | 2.35 | 4.30 |
| | Galv. .. " | .35 | .50 | 1.00 | 1.25 | 1.50 | 2.00 | 2.40 | 3.50 | 6.45 |
| Tee, Male and Fem. | Black .. " | .35 | .55 | .80 | 1.00 | 1.20 | 1.65 | 1.95 | 2.95 | 5.60 |
| | Galv. .. " | .45 | .75 | 1.20 | 1.50 | 1.80 | 2.50 | 3.00 | 4.45 | 8.50 |
| Tee, Female..... | Black .. " | .30 | .50 | .70 | .90 | 1.05 | 1.45 | 1.75 | 2.55 | 4.80 |
| | Galv. .. " | .40 | .65 | 1.05 | 1.30 | 1.60 | 2.20 | 2.65 | 3.90 | 7.20 |



B189

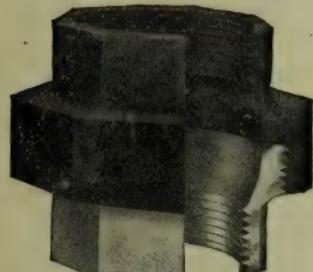
UNIONS**STANDARD
MALLEABLE LIPPED UNION**

| Size.....inches | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 |
|-----------------|---------------|---------------|---------------|---------------|---------------|-----|----------------|----------------|------|----------------|------|----------------|------|
| Black....each | .18 | .18 | .20 | .22 | .27 | .33 | .46 | .58 | .75 | 1.55 | 2.10 | 3.65 | 4.35 |
| Galvan... “ | .27 | .27 | .30 | .33 | .40 | .50 | .70 | .90 | 1.15 | 2.35 | 3.15 | 5.50 | 6.50 |

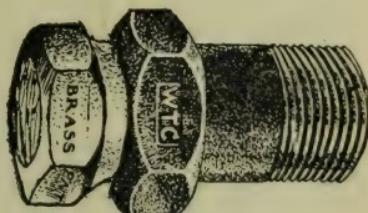
KEWANEE UNIONS

Brass and Iron Ground Ball Joint

KEWANEE OCTAGON

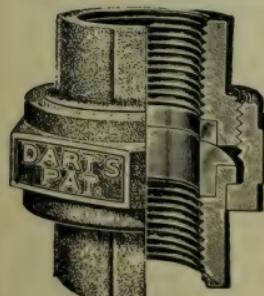


B190

Suitable for
High
Pressure.HEX. AND MALE
Special Pattern

B191

| Size.....inches | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|-------------------|---------------|---------------|---------------|---------------|---------------|-----|----------------|----------------|------|----------------|------|
| Black.....each | .18 | .19 | .22 | .27 | .40 | .48 | .66 | .80 | 1.14 | 2.10 | 2.65 |
| Galvanized..... “ | .22 | .23 | .26 | .34 | .49 | .60 | .82 | 1.10 | 1.40 | 2.75 | 3.50 |

B190 can be furnished from factory, with **Round Ends** instead of octagon.B191 can be furnished from factory, short pattern with **Female Threads**.

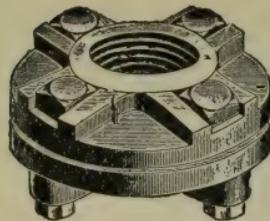
B192

DART UNIONS

Bronze Seats, Ball Bearings, Ground Joints

Suitable for High Pressure Steam.

| Size.inches | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 |
|-------------|---------------|---------------|---------------|---------------|---------------|------|----------------|----------------|------|----------------|------|----------------|-------|
| Black.each | .30 | .30 | .40 | .50 | .60 | .80 | 1.20 | 1.60 | 2.00 | 3.20 | 4.80 | 7.20 | 10.80 |
| Galvan. “ | .45 | .45 | .60 | .75 | .90 | 1.20 | 1.80 | 2.40 | 3.00 | 4.80 | 6.20 | 10.80 | 16.20 |



B195

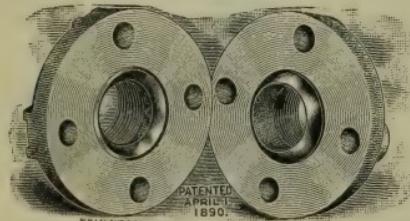
STANDARD CAST-IRON FLANGE UNIONS

(Galvanized Unions Double Black List.)

(14 in., 15 in., and 16 in. UNION SPECIAL)

| | | | | | | | | | |
|-------------|---------------|----------------|------|----------------|----------------|------|----------------|-------|----------------|
| Inches..... | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ |
| Each..... | .40 | .46 | .52 | .64 | .78 | 1.00 | 1.25 | 1.50 | 1.80 |
| Inches..... | 4 | $4\frac{1}{2}$ | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
| Each..... | 2.10 | 2.70 | 3.15 | 3.95 | 5.50 | 7.00 | 10.00 | 11.50 | 16.00 |

Generally the different sizes of flange unions have following number of bolts: $\frac{1}{2}$ to 1-inch, three bolts; $1\frac{1}{4}$ -inch to $3\frac{1}{2}$ -inch, four bolts; 4-inch to 5-inch, five bolts; 6-inch, six bolts; 7-inch and 8-inch, seven bolts; 9-inch, eight bolts; 10-inch, ten bolts; 12 inch, twelve bolts—however, different manufacturers vary, use different number of bolts, and vary somewhat from above figures.



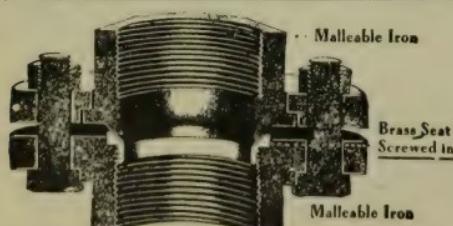
B196

DART PATENT FLANGE UNIONS

BRONZE SEATS, BALL BEARINGS, GROUND JOINTS

Suitable for High Pressure Steam. If with Malleable Iron Flanges, add 10 per cent. If galvanized, add 35 per cent.

| | | | | | | | | | | |
|------------|--------|---------------|----------------|-------|----------------|----------------|-------|----------------|-------|----------------|
| Size | inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ |
| Each..... | | .55 | .60 | .80 | 1.20 | 1.60 | 2.00 | 3.20 | 4.80 | 6.00 |
| Size | inches | 4 | $4\frac{1}{2}$ | 5 | 6 | 7 | 8 | 9 | 10 | .... |
| Each..... | | 7.50 | 8.75 | 10.00 | 12.50 | .... | 18.00 | .... | 28.80 | .... |



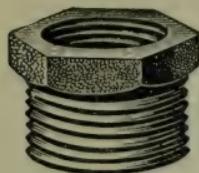
B197

KEWANEE FLANGE UNIONS

Malleable Iron with Ground Joint, Brass Seat. Suitable for High Pressure Steam.

| | | | | | | | | | |
|-----------------|--------|----------------|----------------|----------------|-------|----------------|-------|----------------|-------|
| Size..... | inches | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 |
| Black..... | each | .80 | 1.20 | 1.60 | 2.00 | 3.20 | 4.80 | 6.00 | 7.50 |
| Galvanized..... | " | 1.20 | 1.80 | 2.40 | 3.00 | 4.80 | 7.20 | 9.00 | 11.25 |
| Size..... | inches | $4\frac{1}{2}$ | 5 | 6 | 7 | 8 | 9 | 10 | .... |
| Black..... | each | 8.75 | 10.00 | 12.50 | 15.00 | 18.00 | 21.60 | 28.80 | .... |
| Galvanized..... | " | 13.00 | 15.00 | 18.75 | 22.50 | 27.00 | 32.40 | 43.20 | .... |

CAST-IRON BUSHINGS



For 2 inch and smaller Bushing
reducing one size only, see Malleable
Bushings, B175.

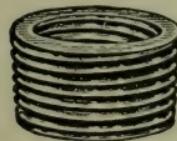
B198

| Size..... |inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ |
|-----------|-------------|---------------|----------------|-----|----------------|----------------|------|----------------|------|----------------|
| Each..... | | .04 | .05 | .06 | .07 | .09 | .14 | .21 | .30 | .40 |
| Size..... |inches | 4 | $4\frac{1}{2}$ | 5 | 6 | 7 | 8 | 9 | 10 | .... |
| Each..... | | .50 | .75 | .93 | 1.25 | 1.87 | 2.75 | 3.25 | 5.00 | .... |

For list of sizes see B240½.

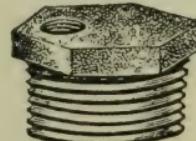
*B199 is a pattern that can be furnished only in some sizes, and where the bushing reduces two or more sizes.

FACED



SPECIAL BUSHINGS

ECCENTRIC



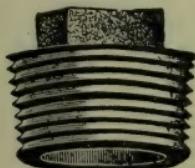
B200

For smaller sizes see Malleables.
Faced Bushings are ordinarily made
reducing one size only.

FACED BUSHINGS

| Size..... |inches | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ | 5 | 6 |
|------------|-------------|----------------|-----|----------------|------|----------------|------|------|
| Faced..... |each | .48 | .70 | 1.20 | 1.50 | 2.10 | 2.60 | 3.75 |

REGULAR



CAST-IRON PLUGS

COUNTERSUNK



B202

| Size..... |inches | $\frac{1}{6}\text{-}\frac{1}{8}$ | $\frac{3}{4}$ | 1 | $1\frac{3}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ |
|------------------|-------------|----------------------------------|----------------|------|----------------|----------------|------|----------------|------|----------------|
| Plug..... |each | .02 | .03 | .04 | .05 | .07 | .10 | .18 | .25 | .38 |
| Countersunk..... | " | .04 | .06 | .08 | .09 | .11 | .15 | .... | .... | .... |
| Solid..... | " | .04 | .06 | .08 | .09 | .11 | .15 | .27 | .38 | .... |
| Size..... |inches | 4 | $4\frac{1}{2}$ | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
| Plug..... |each | .42 | .65 | .88 | 1.20 | 1.85 | 2.75 | 3.25 | 3.75 | 5.00 |
| Solid..... | " | .... | 1.00 | 1.35 | 1.80 | 2.80 | 4.15 | 5.00 | 5.75 | 7.50 |

Left-hand plugs same list as countersunk plugs.
Galvanized Cast-Iron Fittings, double the list of black.

STANDARD CAST-IRON FITTINGS**ELBOW**

B205

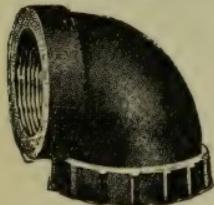
ELBOWS**REDUCING ELBOW**

B206

For list of sizes, see B238.

Pitched Ells are either straight or reducing, at same price.

| Size.....inches | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ |
|---------------------|---------------|----------------|---------------|----------------|-------------------|----------------|----------------|
| Ell.....each | .05 | .05 | .06 | .08 | .10 $\frac{1}{2}$ | .16 | .20 |
| Ell, Reducing....." | .... | .06 | .07 | .09 | .12 | .18 | .23 |
| Ell, Pitched....." | .... | .... | .... | .10 | .13 | .20 | .25 |
| Size.....inches | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ | 5 |
| Ell.....each | .28 | .50 | .75 | 1.05 | 1.20 | 1.75 | 2.00 |
| Ell, Reducing....." | .32 | .60 | .85 | 1.20 | 1.40 | 2.00 | 2.30 |
| Ell, Pitched....." | .35 | .65 | 1.00 | 1.30 | 1.50 | .... | .... |
| Size.....inches | 6 | 7 | 8 | 9 | 10 | 12 | .... |
| Ell.....each | 2.75 | 4.70 | 6.75 | 9.00 | 13.50 | 20.00 | .... |
| Ell, Reducing....." | 3.15 | 5.40 | 7.75 | 10.50 | 15.50 | 23.00 | .... |



B208

**RIGHT AND LEFT
ELBOWS**

For List of sizes, see B238.

| Size.....inches | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|-----------------|---------------|---------------|---------------|---------------|-----|----------------|----------------|-----|----------------|-----|
| Each | .06 | .06 | .07 | .09 | .12 | .18 | .23 | .32 | .60 | .85 |

45 DEGREE ELBOWS

45° Ells are not made reducing, but regular patterns can be bushed in casting at special prices.

| Size.....inches | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ |
|-----------------|---------------|----------------|---------------|----------------|-------|----------------|----------------|
| Each | .06 | .06 | .07 | .10 | .12 | .19 | .24 |
| Size.....inches | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ | 5 |
| Each | .34 | .60 | .90 | 1.25 | 1.45 | 2.20 | 2.50 |
| Size.....inches | 6 | 7 | 8 | 9 | 10 | 12 | .... |
| Each | 3.45 | 5.90 | 8.50 | 11.25 | 17.00 | 25.00 | .... |

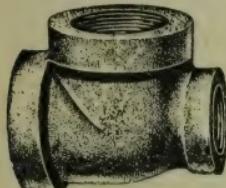
Galvanized Cast-Iron Fittings, double the list of black.



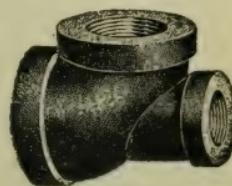
B209

STANDARD CAST-IRON FITTINGS**B210****TEES**

| | | | | | | | | | | |
|-------------|----------------|---------------|----------------|---------------|------|----------------|----------------|-------|----------------|-------|
| Inches..... | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
| Each..... | .08 | .08 | .09 | .12 | .15 | .23 | .29 | .41 | .73 | 1.10 |
| Inches..... | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
| Each..... | 1.50 | 1.75 | 2.55 | 3.00 | 4.00 | 6.80 | 9.75 | 13.00 | 19.50 | 29.00 |

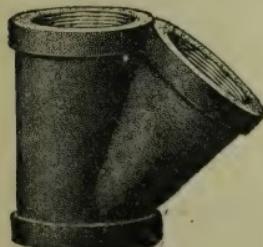
**B211****REDUCING TEES**

Reducing in run or branch or both.
For list of sizes see B239.

***B212**

| | | | | | | | | | | |
|-------------|---------------|----------------|---------------|------|----------------|----------------|-------|----------------|-------|----------------|
| Inches..... | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ |
| Each..... | .09 | 10 | .14 | .17 | .27 | .33 | .47 | .83 | 1.25 | 1.75 |
| Inches..... | 4 | $4\frac{1}{2}$ | 5 | 6 | 7 | 8 | 9 | 10 | 12 | .... |
| Each..... | 2.00 | 2.95 | 3.50 | 4.60 | 7.80 | 11.25 | 15.00 | 22.50 | 33.50 | .... |

*Many sizes where there is considerable reduction in the run only, are made as shown B212.

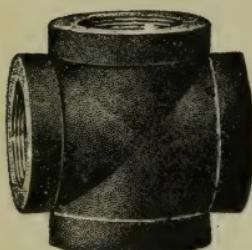
**Y BRANCH**

Reducing Y's are made to order only, by bushing straight patterns when casting.

B213**PRICE EACH**

| | | | | | | | | | |
|-------------|---------------|----------------|------|----------------|----------------|-------|----------------|-------|----------------|
| Size inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ |
| Y Branch | .20 | .28 | .34 | .54 | .66 | .94 | 1.66 | 2.50 | 3.50 |
| Reduced.. | .23 | .33 | .40 | .62 | .76 | 1.08 | 1.90 | 2.90 | 4.00 |
| Size inches | 4 | $4\frac{1}{2}$ | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
| Y Branch | 4.00 | 5.90 | 7.00 | 9.20 | 15.60 | 22.50 | 33.75 | 45.00 | 67.00 |
| Reduced.. | 4.60 | 6.80 | 8.00 | 10.60 | 18.00 | 26.00 | 39.00 | 51.75 | 77.00 |

Galvanized Cast-Iron Fittings, double the list of black.

STANDARD CAST-IRON FITTINGS**STRAIGHT**

B214

CROSS

| Size | inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ |
|------------|--------|---------------|----------------|---------------|------|----------------|----------------|-------|----------------|-------|----------------|
| Each | | .15 | .16 | .22 | .27 | .42 | .53 | .75 | 1.30 | 2.00 | 2.70 |
| Size | inches | 4 | $4\frac{1}{2}$ | 5 | 6 | 7 | 8 | 9 | 10 | 12 | .... |
| Each | | 3.15 | 4.60 | 5.50 | 7.25 | 12.25 | 17.50 | 23.50 | 35.00 | 52.50 | .... |



B215

REDUCING CROSS

See list of sizes; B240.

| Size .inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ |
|--------------|---------------|----------------|------|----------------|----------------|-------|----------------|-------|----------------|
| Each | .18 | .25 | .30 | .46 | .60 | .83 | 1.45 | 2.20 | 3.00 |
| Size .inches | 4 | $4\frac{1}{2}$ | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
| Each | 3.50 | 5.10 | 6.00 | 8.00 | 13.50 | 19.25 | 26.00 | 38.50 | 58.00 |



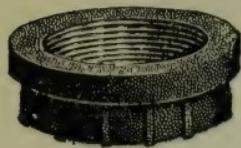
B216

REDUCING COUPLING

For list of sizes, see B238.

| Size..... |inches | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ | 5 |
|------------|-------------|----------------|------|----------------|------|----------------|-------|
| Each | | .60 | .80 | 1.00 | 1.35 | 1.85 | 2.00 |
| Size..... |inches | 6 | 7 | 8 | 9 | 10 | 12 |
| Each | | 2.70 | 5.35 | 6.75 | 8.35 | 10.00 | 15.00 |

Galvanized Cast-Iron Fittings, double the list of black.



B217

STANDARD CAST-IRON FITTINGS

CAPS

| Size..... |inches | 2½ | 3 | 3½ | 4 | 4½ | 5 |
|------------|-------------|------|------|------|------|------|------|
| Price..... |each | .40 | .54 | .75 | .87 | 1.05 | 1.20 |
| Size..... |inches | 6 | 7 | 8 | 9 | 10 | 12 |
| Price..... |each | 1.55 | 2.50 | 2.85 | 4.75 | 5.50 | 7.00 |

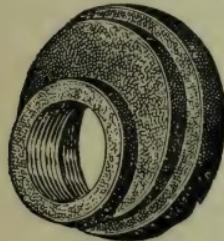


B218

LOCK NUTS

| Size inches | 2½ | 3 | 3¼ | 4 | 4¾ | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
|-------------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|
| Price.each | .27 | .34 | .47 | .64 | .85 | .90 | 1.30 | 1.70 | 2.35 | 2.70 | 3.00 | 4.00 |

Galvanized Cast-Iron Fittings, double the list of black.



B220

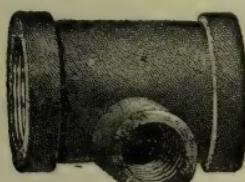
ECCENTRIC CAP PATTERN REDUCER

(See Malleable Offset Reducers, B177.)

| 2½x1¼ | 2½x1½ | 2½x2 | 3x2 | 3x2½ | 3½x3 | 3½x2½ | 4x3½ | 4x3 | 5x4 | 6x4 |
|-------|-------|------|------|------|------|-------|------|------|------|------|
| 1.50 | 1.50 | 1.50 | 2.40 | 2.40 | 3.00 | 3.00 | 4.00 | 4.00 | 6.00 | 8.00 |

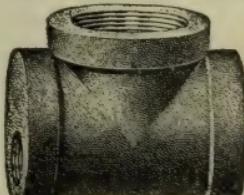
ECCENTRIC TEES

ECCENTRIC ON OUTLET



B221

ECCENTRIC ON RUN

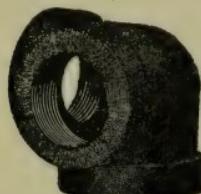


B222

These fittings are designed to prevent the accumulation and lodgement of condensation.

Order must be accompanied with sketch, showing position in which the fitting is to be placed. When B221 is reduced in the run sketch must show which end is reduced.

When B222 is to lie on the side, it is necessary to show which side will be down.

STANDARD CAST-IRON FITTINGS**SIDE-OUTLET ELBOW**

B223

SIDE-OUTLET TEE

B224

SIDE-OUTLET ELBOWS

| | | | | | | | | | | | | | |
|-------------|---------------|---------------|-----|----------------|----------------|-----|----------------|------|----------------|------|----------------|------|------|
| Inches..... | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ | 5 | 6 |
| Each | .18 | .24 | .30 | .48 | .60 | .84 | 1.50 | 2.25 | 3.15 | 3.60 | 5.25 | 6.00 | 8.25 |

SIDE-OUTLET TEES

| | | | | | | | | | | | | | |
|-------------|---------------|---------------|-----|----------------|----------------|------|----------------|------|----------------|------|----------------|------|-------|
| Inches..... | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ | 5 | 6 |
| Each | .27 | .36 | .45 | .70 | .90 | 1.25 | 2.25 | 3.25 | 4.50 | 5.25 | 7.65 | 9.00 | 12.00 |

Sizes not listed above made to order at special net prices.

5-WAY CROSSES

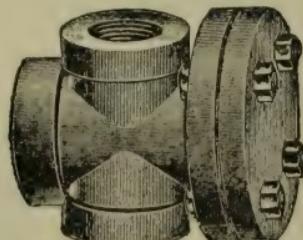
Quoted on application.

**CAST-IRON OFFSET**

B225

$\frac{3}{4}$ -inch to 6-inch pipe sizes to Offset 4-inch, 6-inch, 8-inch, etc., from factory.

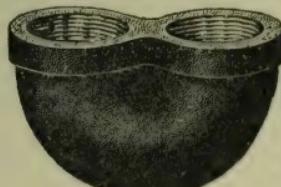
Prices on application.

**BLOW-OFF CROSS**

B226

| | | | | | | | | | |
|------------|--------|------------------|-------|-------|------------------|------------------|-------|------------------|-------|
| Size..... | inches | $3x1\frac{1}{2}$ | $3x2$ | $4x2$ | $4x2\frac{1}{2}$ | $5x2\frac{1}{2}$ | $5x3$ | $6x2\frac{1}{2}$ | $6x3$ |
| Price..... | each | 10.00 | 10.00 | 12.00 | 12.00 | 18.00 | 18.00 | 27.00 | 27.00 |

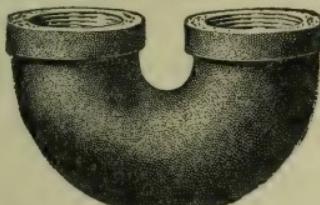
The convenience of this fitting and the ease with which it can be disconnected, when necessity requires boiler to be blown out, is plainly apparent.

CAST-IRON FITTINGS**RETURN BENDS.—Close Pattern**

B227

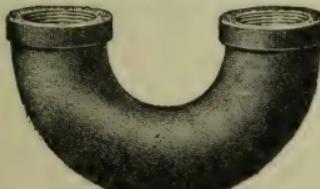
| Size.....inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | 4 |
|-------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------|
| R. H.....each | .18 | .20 | .22 | .28 | .40 | .57 | 1.20 | 1.70 | 5.00 |
| R. and L. or L. H... “ | .21 | .23 | .26 | .33 | .46 | .66 | 1.40 | 1.95 | 5.25 |
| Pitched..... “ | ... | .23 | .26 | .33 | ... | ... | ... | ... | ... |
| Cent'r to Cent'r.inches | $1\frac{1}{4}$ | $1\frac{1}{2}$ | $1\frac{3}{4}$ | $2\frac{1}{4}$ | $2\frac{1}{2}$ | $3\frac{1}{4}$ | $3\frac{3}{4}$ | $4\frac{1}{4}$ | 6 |

Pitched Bends, R. H. or R. and L., also Left Hand Ret. Bends are made to order, and list price is same as R. & L. Bends. When ordering pitched Bends, state length of coil to be used in.

RETURN BENDS.—Open Pattern

B228

| Size.....inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | 4 |
|-------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------|
| R. H.....each | .25 | .26 | .30 | .40 | .55 | .80 | 1.35 | 2.20 | 5.75 |
| R. and L. or L. H... “ | .30 | .30 | .35 | .46 | .64 | .92 | 1.55 | 2.50 | 6.00 |
| Cent'r to Cent'r.inches | $1\frac{3}{4}$ | $1\frac{1}{8}$ | $2\frac{3}{8}$ | 3 | $3\frac{1}{2}$ | $4\frac{1}{2}$ | $5\frac{1}{2}$ | $6\frac{1}{2}$ | 7 |

RETURN BENDS.—Special Wide Pattern

B229

| Size, in. | 1 | 1 | 1 | 1 | $1\frac{1}{4}$ | $1\frac{1}{4}$ | $1\frac{1}{2}$ | $1\frac{1}{2}$ | 2 | 2 | 2 | 4 | 4 |
|--------------|-----|------|------|------|----------------|----------------|----------------|----------------|------|------|------|----------------|-------|
| Blk..ea. | .50 | .60 | .75 | 1.00 | 1.00 | 1.25 | 1.60 | 2.00 | 2.00 | 3.00 | 3.50 | 6.50 | 7.50 |
| Galv. “ | .90 | 1.10 | 1.30 | 1.60 | 1.75 | 2.00 | 2.60 | 3.25 | 3.25 | 4.50 | 5.00 | 10.00 | 11.00 |
| C. to C... “ | 4 | 5 | 6 | 8 | 4 | 6 | 6 | 8 | 6 | 7 | 8 | $7\frac{1}{2}$ | 11 |

Return Bends not listed will be furnished at special net prices.



B230

CAST-IRON FITTINGS**BACK OUTLET RETURN BENDS**

Close Pattern

| Size.....inches | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|-------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Right Hand.....each | .38 | .42 | .60 | .80 | 1.15 | 2.00 | 3.00 |
| Right and Left... " | .42 | .48 | .70 | .95 | 1.30 | 2.30 | 3.50 |
| Center to Center inches | $1\frac{1}{8}$ | $2\frac{1}{4}$ | $2\frac{1}{4}$ | $2\frac{1}{2}$ | $3\frac{1}{4}$ | $3\frac{3}{4}$ | $4\frac{1}{4}$ |



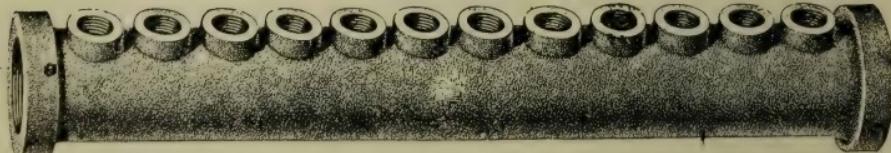
B231

SIDE-OUTLET RETURN BEND

From Factory. Prices on Application

LARGE MANIFOLDS OR BRANCH TEES

For Dry Kilns or Heating Apparatus



B232

Made with 3-in., 4-in., 5-in., or 6-in. Run, and with from 6 to 24 branches, for 1-in., $1\frac{1}{4}$ -in., $1\frac{1}{2}$ -in., or 2-in. pipe coils.

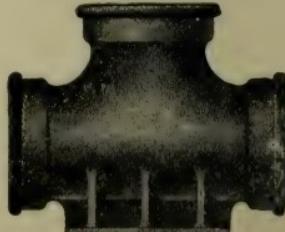
For shipment from factory only. Prices on application.



B233

**LONG TURN BASE
ELBOWS AND TEES**

Quoted on application.



B234

BRANCH TEES OR MANIFOLDS**No. 1 FOR CIRCULATION****No. 2 FOR CIRCULATION****No. 3 FOR BOX COILS**

Branch Tees are carried in stock with all openings threaded right hand, but can be furnished to order tapped any way.

No. 3 is sometimes wanted with left-hand thread in branches for box coils.

Branch Tees carried in stock generally have the inlet tapped one or two sizes larger than the branches.

| No. of Branches | 1-INCH BRANCHES | | | 1½-INCH BRANCHES | | | 1½-INCH BRANCHES | | | 2-IN. B'CH'S | |
|-----------------|---------------------------|---------------|--------------|----------------------------|--------------|---------------|---------------------------|---------------|--------------|-----------------|--|
| | 2½ in. Center to Center | | | 3 in. Center to Center | | | 3½ in. Center to Center | | | | |
| | 1 in. or 1¼ in. Run | 1½ in. Run | 2 in. Run | 1¼ in. or 1½ in. Run | 2 in. Run | 2½ in. Run | 1½ in. or 2 in. Run | 2½ in. Run | 3 in. Run | | |
| 2 | .90 | 1.00 | 1.15 | ... | ... | ... | ... | ... | ... | ... | |
| 3 | 1.05 | 1.15 | 1.35 | 1.65 | 1.90 | 2.40 | 2.70 | 3.45 | 3.80 | 5.75 | |
| 4 | 1.15 | 1.30 | 1.60 | 2.00 | 2.40 | 2.85 | 3.35 | 4.15 | 4.60 | 7.00 | |
| 5 | 1.35 | 1.45 | 1.85 | 2.40 | 2.90 | 3.55 | 4.00 | 5.00 | 5.50 | 8.50 | |
| 6 | 1.60 | 1.75 | 2.10 | 2.80 | 3.30 | 3.95 | 4.65 | 5.75 | 6.25 | 9.75 | |
| 7 | 1.90 | 2.20 | 2.45 | 3.20 | 3.90 | 4.20 | 5.25 | 6.50 | 7.25 | 11.75 | |
| 8 | 2.20 | 2.45 | 2.75 | 3.60 | 4.50 | 4.95 | 5.85 | 7.00 | 7.75 | 12.75 | |
| 9 | 2.65 | 2.90 | 3.40 | 4.30 | 5.25 | 6.15 | 6.50 | 8.25 | 9.00 | 13.50 | |
| 10 | .... | 3.30 | 4.00 | 4.80 | 5.85 | 6.85 | 7.60 | 9.25 | 10.00 | 15.00 | |
| 11 | .... | 4.50 | 4.80 | 5.00 | 6.25 | 7.25 | 8.00 | 9.75 | 10.75 | .... |  |
| 12 | .... | 4.75 | 5.10 | 5.25 | 6.50 | 7.65 | 8.50 | 10.50 | 11.50 | .... |  |
| 13 | .... | 5.50 | 6.00 | 6.00 | 7.00 | 8.25 | .... | .... | .... | .... |  |
| 14 | .... | 7.00 | 7.25 | 6.75 | 7.75 | 9.00 | .... | .... | .... | .... |  |
| 15 | .... | 7.50 | 7.75 | 7.50 | 8.50 | 9.75 | .... | .... | .... | .... |  |
| 16 | .... | 8.00 | 8.25 | 8.50 | 9.50 | 10.75 | ... | .... | .... | .... |  |

*Can furnish 2-inch Branch Tees, with 2 or 3½ run. Price on application.

*Can furnish No. 3 Branch Tees with inlet on side instead of back. Special.

Always order Branch Tees by *size* and *number*, and state size run or inlet desired or preferred.

SCREWED FITTINGS

The following is a list of what is known by the manufacturers as

STANDARD SIZES OF

STANDARD CAST-IRON SCREWED FITTINGS

Other sizes can be furnished on short notice
by bushing the regular pattern in the sand.

Elbows, straight sizes $\frac{1}{4}$ to 12-inch inclusive.

45° Elbows, $\frac{3}{8}$ to 12-inch inclusive.

Right and Left Elbows, $\frac{1}{4}$ to 3-inch inclusive.

Tees, straight sizes, $\frac{1}{4}$ to 12-inch inclusive.

Crosses, straight sizes, $\frac{3}{8}$ to 12-inch inclusive.

Y's, straight sizes, $\frac{1}{2}$ to 12-inch inclusive.

Return Bends, close $\frac{1}{2}$ to 3-inch inclusive.

Return Bends, open $\frac{1}{2}$ to 3-inch inclusive.

Flange Unions, $\frac{1}{2}$ to 12-inch inclusive.

Caps, 2 to 12-inch inclusive.

Locknuts, $2\frac{1}{2}$ to 12-inch inclusive.

Plugs, $\frac{1}{4}$ to 12-inch inclusive.

REDUCING ELBOWS

| | | | |
|-----------------------------------|------------------------------------|-------------------------|--------------|
| $\frac{1}{2} \times \frac{3}{8}$ | $1\frac{1}{2} \times 1\frac{1}{4}$ | $3 \times 2\frac{1}{2}$ | 5×4 |
| $\frac{3}{4} \times \frac{1}{2}$ | $1\frac{1}{2} \times \frac{3}{4}$ | 3×2 | 6×5 |
| $1 \times \frac{3}{4}$ | $2 \times 1\frac{1}{4}$ | $3\frac{1}{2} \times 3$ | 6×4 |
| $1 \times \frac{1}{2}$ | $2 \times 1\frac{1}{4}$ | $4 \times 3\frac{1}{2}$ | 8×6 |
| $1\frac{1}{2} \times 1$ | 2×1 | 4×3 | |
| $1\frac{1}{2} \times \frac{3}{4}$ | $2\frac{1}{2} \times 2$ | $4 \times 2\frac{1}{2}$ | |
| $1\frac{1}{2} \times \frac{1}{2}$ | $2\frac{1}{2} \times 1\frac{1}{2}$ | $4\frac{1}{2} \times 4$ | |

REDUCING COUPLINGS

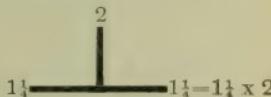
| | | |
|------------------------------------|-------------------------|----------------|
| $2\frac{1}{2} \times 2$ | $4 \times 3\frac{1}{2}$ | 6×5 |
| $2\frac{1}{2} \times 1\frac{1}{2}$ | 4×3 | 6×4 |
| $3 \times 2\frac{1}{2}$ | $4 \times 2\frac{1}{2}$ | 6×3 |
| 3×2 | 4×2 | |
| $3\frac{1}{2} \times 3$ | $4\frac{1}{2} \times 4$ | 7×6 |
| $3\frac{1}{2} \times 2\frac{1}{2}$ | 5×4 | 8×6 |
| | 5×3 | 10×8 |
| | | 12×10 |

REDUCING CAST-IRON TEES

In reading Tees, the run is first named, then the outlet, thus:



B239



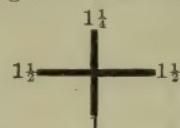
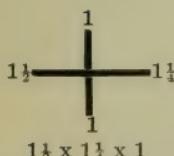
REDUCING TEES—Continued.

| | | |
|------------|------------|-------------|
| 5 x 2½ | 6 x 2 | 8 x 7 x 6 |
| 5 x 2 | 6 x 5 x 6 | 8 x 6 x 8 |
| 5 x 1½ | 6 x 4 x 6 | 8 x 6 x 7 |
| 5 x 1¼ | 6 x 3 x 6 | 8 x 6 x 6 |
| 5 x 4 x 5 | 6 x 2½ x 6 | 8 x 5 x 8 |
| 5 x 4 x 4 | 5 x 6 | 8 x 5 x 5 |
| 5 x 4 x 3 | 4 x 6 | 8 x 4 x 8 |
| 5 x 4 x 2½ | 6 x 5 x 5 | 6 x 8 |
| 5 x 4 x 2 | | |
| 5 x 3 x 5 | 7 x 6 | 10 x 8 |
| 5 x 3 x 4 | 7 x 5 | 10 x 6 |
| 5 x 3 x 3 | 7 x 4 | 10 x 5 |
| 5 x 3 x 2½ | 7 x 6 x 7 | 10 x 4 |
| 5 x 3 x 2 | 7 x 6 x 6 | 10 x 8 x 8 |
| 5 x 2½ x 5 | 7 x 6 x 5 | |
| 5 x 2½ x 4 | 7 x 5 x 5 | 12 x 10 |
| 5 x 2½ x 3 | 6 x 7 | 12 x 8 |
| 5 x 2 x 5 | | 12 x 6 |
| 4 x 5 | 8 x 6 | 12 x 8 x 10 |
| 6 x 5 | 8 x 5 | 12 x 8 x 8 |
| 6 x 4 | 8 x 4 | |
| 6 x 3½ | 8 x 3½ | |
| 6 x 3 | 8 x 3 | |
| 6 x 2½ | 8 x 2½ | |
| | 8 x 2 | |

REDUCING CROSSES

B240

Reducing Crosses are read thus:

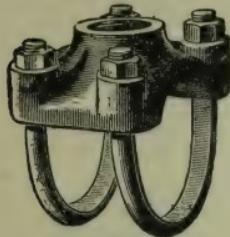


| | | | | | | |
|-----------|---------------|---------------|---------------|-----------|-----------|---------|
| 1/2 x 1/4 | 1 1/4 x 3/4 | 2 x 1 | 3 x 2 | 4 x 3 1/2 | 6 x 5 | 8 x 6 |
| 1/2 x 3/8 | 1 1/4 x 1/2 | 2 x 3/4 | 3 x 1 1/2 | 4 x 3 | 6 x 4 | 8 x 7 |
| 3/4 x 3/8 | 1 1/2 x 1 1/4 | 2 1/2 x 2 | 3 x 1 | 4 x 2 | 6 x 3 | 10 x 7 |
| 3/4 x 1/2 | 1 1/2 x 1 | 2 1/2 x 1 1/2 | 3 x 3/4 | 5 x 4 | 6 x 2 1/2 | 10 x 8 |
| 1 x 3/4 | 1 1/2 x 1/2 | 2 1/2 x 1 | 3 1/2 x 3 | 5 x 3 | 7 x 5 | 12 x 8 |
| 1 x 1/2 | 2 x 3/4 | 2 1/2 x 3/4 | 3 1/2 x 2 1/2 | 5 x 2 1/2 | 7 x 6 | 12 x 10 |
| 1 1/4 x 1 | 2 x 1 1/4 | 3 x 2 1/2 | 3 1/2 x 2 | 5 x 2 | | |

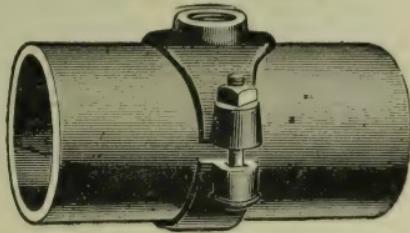
BUSHINGS

Bushings reducing one size only, up to and including 2 inch, can be furnished in Malleable Iron. All other sizes are made in Cast-Iron.

| | | | | | | |
|-------------|---------------|---------------|---------------|-----------|-----------|---------|
| 1/2 x 1/4 | 1 1/2 x 3/4 | 3 x 2 | 4 x 2 1/2 | 5 x 3 | 7 x 4 1/2 | 9 x 7 |
| 1/2 x 3/8 | 1 1/2 x 1/2 | 3 x 1 1/2 | 4 x 2 | 5 x 2 1/2 | 7 x 4 | 9 x 6 |
| 3/4 x 1/2 | 2 x 1 1/4 | 3 x 1 | 4 x 1 1/4 | 5 x 2 | 7 x 3 1/2 | 10 x 8 |
| 1 x 1/2 | 2 x 1 | 4 x 1 | 6 x 5 | 7 x 2 1/2 | 10 x 6 | |
| 1 x 3/4 | 2 x 3/4 | 3 1/2 x 3 | 6 x 4 1/2 | 7 x 2 | | |
| 1 x 1 | 2 x 1/2 | 3 1/2 x 2 1/2 | 6 x 4 | | | 12 x 10 |
| 1 x 1 | 3 x 1 | 3 1/2 x 2 | 6 x 3 | | | 12 x 8 |
| 1 1/4 x 3/8 | 2 1/2 x 1 1/4 | 3 1/2 x 1 1/2 | 4 1/2 x 3 | 6 x 3 | 8 x 6 | 12 x 6 |
| 1 1/4 x 1/2 | 2 1/2 x 1 | 3 1/2 x 1 1/4 | 4 1/2 x 2 1/2 | 6 x 2 1/2 | 8 x 5 | |
| 1 1/4 x 1 | 2 1/2 x 3/4 | 4 x 3 1/2 | 5 x 4 1/2 | 6 x 2 | 8 x 4 | |
| 1 1/2 x 1 | 3 x 2 1/2 | 4 x 3 | 5 x 3 1/2 | 7 x 6 | 8 x 3 | |

PIPE SADDLES AND CLAMPSCast and Malleable
Saddles—Double StrapMalleable
Water Pipe Clamps

B241



B242

**DOUBLE STRAP MALLEABLE AND CAST-IRON
PIPE SADDLES—B241**

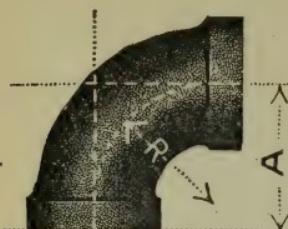
| Size Inches | Tapped | Each | Size Inches | Tapped | Each |
|----------------|---------|------|----------------|---------|-------|
| 2 | 1 to 1½ | 1.00 | 6 | 1 to 2 | 2.75 |
| 2½ | 1 to 1½ | 1.25 | 6 | 2½ to 4 | 5.75 |
| 3 | 1 to 2 | 1.25 | 7 | 1 to 3 | 6.50 |
| 4 | 1 to 2 | 1.50 | 8 | 2 to 4 | 6.50 |
| 4½ | ..... | ... | 10 | 2 to 4 | 10.00 |
| 5 | 1 to 2 | 2.75 | 12 | 3 to 6 | 14.00 |

SINGLE STRAP CAST SADDLES (Not Illustrated)

1x¾ to ¾ in. 55c. 1¼x⅜ to 1 in. 65c. 1½x⅜ to 1 in. 70c. 2x1 to 1¼ 75c.

MALLEABLE IRON WATER PIPE CLAMPS—B242

| CLAMPS WILL FIT | | | | Price Each | CLAMPS WILL FIT | | | | Price Each |
|-----------------|--------------------------------------|-------------------------------------|--|------------------------------------|-----------------|--------------------------------------|-------------------------------------|--|---------------|
| No. | Outside Diam. of Circle Inches | Size Wrought Iron Pipe Inches | Size Cast-Iron Diam. Casing Inches | | No. | Outside Diam. of Circle Inches | Size Wrought Iron Pipe Inches | Size Cast-Iron Diam. Casing Inches | |
| 1 | 2 ³ / ₈ | 2 | 2 ¹ / ₂ | ... | 17 | 6 | 6 | 5 | 2.40 |
| 2 | 2 ⁷ / ₈ | 2 ¹ / ₂ | 3 | 2 | 18 | 6 | 6 | 5 | 4.50 |
| 3 | 3 ¹ / ₂ | 3 | 3 ¹ / ₂ | ... | 19 | 6 | 6 | 5 | 2.25 |
| 4 | 3 ¹ / ₂ | 3 | 3 ¹ / ₂ | 1 ¹ / ₄ to 2 | 20 | 6 | 6 | 5 | 2.50 |
| 5 | 4 | 3 ¹ / ₂ | 4 | 3 | 21 | 6 | 6 | 5 | 5.00 |
| 6 | 4 | 3 ¹ / ₂ | 4 | 3 | 22 | 7 | 7 | 6 | 2.50 |
| 7 | 4 ¹ / ₂ | 4 | 4 ¹ / ₂ | ... | 23 | 7 | 7 | 6 | 2.70 |
| 8 | 4 ¹ / ₂ | 4 | 4 ¹ / ₂ | 2 | 24 | 7 | 7 | 6 | 5.00 |
| 9 | 4 ¹ / ₂ | 4 | 4 ¹ / ₂ | 3 | 25 | 7 | 7 | 6 | 2.50 |
| 10 | 5 | 4 ¹ / ₂ | 5 | 4 | 26 | 7 | 7 | 6 | 2.70 |
| 11 | 5 | 4 ¹ / ₂ | 5 | 4 | 27 | 7 | 7 | 6 | 5.00 |
| 12 | 5 | 4 ¹ / ₂ | 5 | 4 | 28 | 8 | 8 | 7 | 4.50 |
| 13 | 5 ¹ / ₂ | 5 | 5 ¹ / ₂ | ... | 29 | 8 | 8 | 7 | 5.00 |
| 14 | 5 ¹ / ₂ | 5 | 5 ¹ / ₂ | 2 | 30 | 8 | 8 | 7 | 5.50 |
| 15 | 5 ¹ / ₂ | 5 | 5 ¹ / ₂ | 3 | 31 | 8 | 8 | 7 | 5.50 |
| 16 | 6 | .... | 6 | 5 | 32 | 8 | 8 | 4 | 6.00 |



LONG SWEEP CAST-IRON FITTINGS

Suitable for Working Pressure up to 150 pounds

NO. 1

LONG TURN ELBOW

B243

| Inches..... | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 3 1/2 | 4 |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Each..... | .32 | .40 | .55 | .80 | 1.20 | 2.25 | 3.25 | 3.50 |
| *Reducing..... | .48 | .60 | .83 | 1.20 | 1.80 | 3.38 | 4.88 | 5.25 |
| Size.....inches | 4 1/2 | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
| Each..... | 5.50 | 6.50 | 8.75 | 13.00 | 17.00 | 25.50 | 30.00 | 40.00 |
| *Reducing..... | 8.25 | 9.75 | 13.13 | 19.50 | 25.50 | 38.25 | 45.00 | 60.00 |

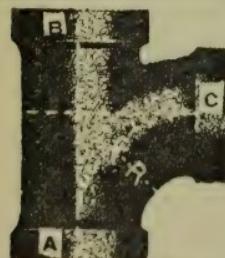


NO. 2 DOUBLE BRANCH ELBOW B244

See B289 for Twin Ells.

When ordering Reducing double ell, use letters as illustrated, writing thus, A3xB2xC1 1/2 inches.
See note bottom of page.

| Inches..... | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 3 1/2 | 4 |
|----------------|-------|-------|-------|-------|-------|-------|-------|--------|
| Each..... | .64 | .80 | 1.10 | 1.60 | 2.40 | 4.50 | 6.50 | 7.00 |
| *Reducing..... | .96 | 1.20 | 1.65 | 2.40 | 3.60 | 6.75 | 9.75 | 10.50 |
| Inches..... | 4 1/2 | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
| Each..... | 11.00 | 13.00 | 17.50 | 26.00 | 34.00 | 51.00 | 60.00 | 80.00 |
| *Reducing..... | 16.50 | 19.50 | 26.25 | 39.00 | 51.00 | 76.50 | 90.00 | 120.00 |



NO. 3 SINGLE SWEEP TEE B245

To read Reducing, see note bottom of page.

| Inches..... | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 3 1/2 | 4 |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Each..... | .48 | .60 | .82 | 1.20 | 1.80 | 3.40 | 4.90 | 5.25 |
| *Reducing..... | .72 | .90 | 1.23 | 1.80 | 2.70 | 5.10 | 7.35 | 7.88 |
| Inches..... | 4 1/2 | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
| Each..... | 8.25 | 9.75 | 13.25 | 19.50 | 25.50 | 38.00 | 45.00 | 60.00 |
| *Reducing..... | 12.38 | 14.63 | 19.88 | 29.25 | 38.25 | 57.00 | 67.50 | 90.00 |

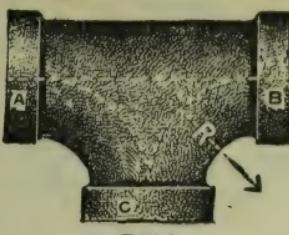
*Reducing Fittings are made by bushing regular patterns when Casting.

Fittings for Extra High Pressure quoted on application.

Galvanized Long Sweep Fittings to order at special price.

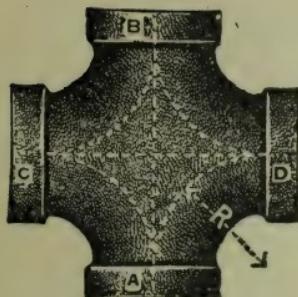
NOTE.— Read Reducing Fitting Openings in order as indicated A. B. C. on cuts.
There is no universal rule for reading double branch ell. If possible send sketch.

CAST IRON
SCREWED

STRAIGHT BACK TEE

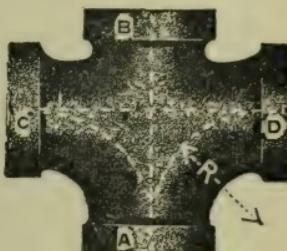
LONG SWEEP
FITTINGS

B246



B247

LONG
SWEET
CROSSES



B248

Read Reducing Fittings in the order indicated. A, B, C, D. A, B indicates the run.

| Size.....inches | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 3 1/2 | 4 |
|-----------------|-------|-------|-------|-------|-------|--------|--------|--------|
| Tee.....each | .64 | .80 | 1.10 | 1.60 | 2.40 | 4.50 | 6.50 | 7.00 |
| " *Reducing " | .96 | 1.20 | 1.65 | 2.40 | 3.60 | 6.75 | 9.75 | 10.50 |
| Cross.....each | ..... | 1.10 | 1.50 | 2.15 | 3.20 | 6.00 | 8.75 | 9.50 |
| " *Reducing " | ..... | 1.65 | 2.25 | 3.23 | 4.80 | 9.00 | 13.13 | 14.25 |
| Size.....inches | 4 1/2 | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
| Tee.....each | 11.00 | 13.00 | 17.50 | 26.00 | 34.00 | 51.00 | 60.00 | 80.00 |
| " *Reducing " | 16.50 | 19.50 | 26.25 | 39.00 | 51.00 | 76.50 | 90.00 | 120.00 |
| Cross.....each | 15.00 | 17.50 | 24.00 | 35.00 | 45.00 | 68.00 | 80.00 | 107.00 |
| " *Reducing " | 22.50 | 26.25 | 36.00 | 52.50 | 67.50 | 102.00 | 120.00 | 160.50 |

*Reducing Tees and Crosses made to order only, by bushing in the sand.

SPECIAL
FITTINGS



ELL. B249

FLANGED AND
SCREWED

DRILLED

TEE. B250

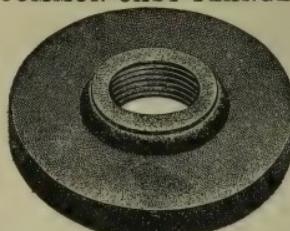
| Size.....inches | 2 | 2 1/2 | 3 | 3 1/2 | 4 | 5 | 6 | 7 | 8 |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Ell, Fl'ng'd One End | 5.00 | 5.50 | 6.00 | 6.50 | 7.50 | 10.00 | 14.00 | 25.00 | 30.00 |
| Ell, " Two Ends | 6.00 | 6.75 | 7.50 | 8.50 | 10.00 | 12.50 | 17.50 | 30.00 | 35.00 |
| Tees, " One or Two Ends | 8.00 | 9.00 | 10.00 | 11.00 | 12.00 | 15.00 | 22.00 | 40.00 | 45.00 |
| Tees, " Three " | 9.00 | 10.00 | 11.50 | 13.00 | 15.00 | 18.00 | 26.00 | 45.00 | 50.00 |
| Crosses, " Two or Three " | 11.00 | 12.50 | 13.50 | 15.00 | 17.00 | 22.00 | 30.00 | 55.00 | 65.00 |
| Crosses, " Three or Four " | 12.00 | 13.50 | 15.00 | 17.00 | 20.00 | 25.00 | 35.00 | 60.00 | 70.00 |

Can reduce screw end by bushing in sand, at same price. Send sketch.

FLANGE DRILLED
FOR SCREWS

B251

COMMON CAST FLANGE



B252

CURVED FLANGE



B253

DRILLED FLOOR FLANGES B251

With Screw Holes

| Size.....inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|-----------------|---------------|----------------|----------------|-----|----------------|----------------|-----|
| Each..... | .14 | .14 | .18 | .22 | .25 | .31 | .45 |
| Diam.....inches | 3 | $3\frac{1}{2}$ | $3\frac{1}{4}$ | 4 | $4\frac{1}{2}$ | $4\frac{1}{2}$ | 6 |

COMMON CAST FLANGES B252

| Pipe Size.. inches | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|--------------------|--------|----------------|---------------------|---------------------|----------------|---------------------|
| Diam. and Price.. | 4" .16 | 4" .16 | $4\frac{1}{2}"$.22 | $5\frac{1}{2}"$.35 | 6" .42 | $6\frac{1}{2}"$.50 |
| " " " | 5" .30 | 5" .30 | 5" .30 | 6" .42 | 7" .62 | 7" .62 |
| " " " | 6" .42 | 6" .40 | 6" .40 | 7" .60 | 8" .90 | 8" .90 |

| Pipe Size...inches | $3\frac{1}{2}$ | 4 | $4\frac{1}{4}$ | 5 | 6 | 7 |
|--------------------|----------------|----------|----------------|----------|----------|----------|
| Diam. and Price.. | 8" .90 | 8" .90 | 9" 1.15 | 10" 1.50 | 10" 1.50 | 12" 2.20 |
| " " " | 9" 1.15 | 9" 1.50 | 10" 1.50 | 11" 1.75 | 11" 1.75 | 13" 2.80 |
| " " " | 10" 1.50 | 10" 1.50 | 11" 1.75 | 12" 2.20 | 14" 3.25 | 15" 4.00 |

| Pipe Size...inches | 8 | 9 | 10 | 12 | 14 | 16 |
|--------------------|----------|----------|----------|----------|----------|------------------------|
| Diam. and Price.. | 13" 2.00 | 15" 4.00 | 16" 5.00 | 18" 7.00 | 20" 8.50 | 22 $\frac{1}{2}$ 25.00 |
| " " " | 14" 3.25 | 16" 5.00 | 17" 5.00 | 19" 7.50 | 21" 9.50 | 23 $\frac{1}{2}$ 28.00 |
| " " " | 16" 5.00 | 17" 5.75 | 19" 7.50 | 20" 8.50 | ..... | ..... |

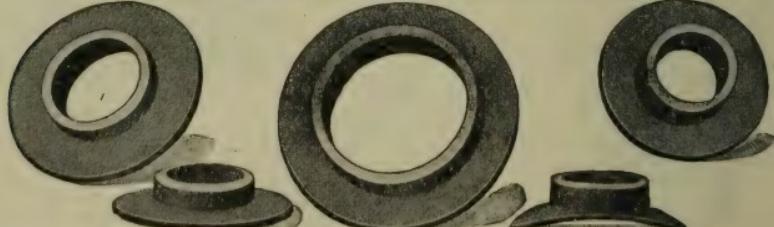
CURVED FLANGES B253

State diameter of flange, size of pipe threaded for and diameter of circle to fit.

| Pipe Size .....,inches | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------------------|----------------|---|----------------|---|---|----|----|----|----|
| Diam. of Flange.....inches | 6 | 7 | 8 | 9 | 9 | 11 | 12 | 13 | 14 |

Prices on application. Can furnish with special wide boss, for any size pipe.

FORGED STEEL PIPE FLANGES B254



| Size Pipe inches | 3 | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ | 5 | 6 | 7 | .8 | 9 | 10 | 12 |
|------------------------|----------------|----------------|---------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-----------------|-----------------|
| Diameter Flange...ins. | 9 | $9\frac{1}{2}$ | 10 | $10\frac{1}{2}$ | $11\frac{1}{2}$ | $12\frac{1}{2}$ | 14 | 15 | 16 | $17\frac{1}{2}$ | 20 |
| Thickness " " | $\frac{9}{8}$ | $\frac{7}{8}$ | $\frac{7}{8}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{3}{4}$ | $\frac{13}{16}$ |
| Depth " " | $1\frac{1}{2}$ | $1\frac{1}{2}$ | 2 | 2 | 2 | 2 | $2\frac{1}{2}$ | $2\frac{1}{2}$ | $2\frac{1}{2}$ | $2\frac{1}{2}$ | $2\frac{1}{2}$ |
| Bent or Threaded, ea. | 2.80 | 3.20 | 3.50 | 4.20 | 5.00 | 6.00 | 9.00 | 12.00 | 30.00 | 35.00 | 50.00 |
| Flat Not " " | 2.65 | 3.00 | 3.35 | 4.00 | 4.75 | 5.70 | 8.60 | 11.40 | 27.00 | 32.00 | 46.00 |

Smaller sizes quoted on application.



B265



B266

CASING FITTINGS**CAST IRON**

For Fine Thread

WELL CASING

| Inside Diameter. inches | 4 | 4 $\frac{1}{4}$ | 4 $\frac{1}{2}$ | 4 $\frac{3}{4}$ | 5 | 5 $\frac{3}{16}$, 5 $\frac{5}{8}$ | 6 $\frac{1}{4}$, 6 $\frac{5}{8}$ | 7 $\frac{5}{8}$ | |
|----------------------------|------|-----------------|-----------------|-----------------|------|------------------------------------|-----------------------------------|-----------------|-------|
| Elbows | Each | 2.50 | 2.50 | 3.00 | 3.00 | 3.50 | 4.00 | 7.00 | 10.00 |
| Elbows, reducing | " | 3.00 | 3.00 | 3.75 | 3.75 | 4.35 | 5.00 | 8.75 | 12.50 |
| Elbows, 45° | " | 3.75 | 3.75 | 4.00 | 4.00 | 4.50 | 5.50 | 9.00 | 13.00 |
| Tees | " | 3.50 | 3.50 | 4.00 | 4.25 | 5.00 | 5.50 | 10.00 | 15.00 |
| Tees, reducing | " | 4.35 | 4.35 | 5.00 | 5.25 | 6.25 | 6.75 | 12.50 | 18.75 |
| Crosses | " | 5.00 | 5.00 | 5.70 | 6.00 | 7.00 | 7.80 | 14.00 | 20.00 |
| Crosses, reducing | " | 6.25 | 6.25 | 7.00 | 7.50 | 8.75 | 9.70 | 17.50 | 25.00 |
| Plugs | " | 1.35 | 1.35 | 1.75 | 1.75 | 2.00 | 2.40 | 3.75 | 5.50 |
| Bushings | " | 1.50 | 1.50 | 1.85 | 1.85 | 2.00 | 2.50 | 3.75 | 5.50 |
| Flange Unions | " | 4.50 | 4.50 | 5.00 | 5.00 | 5.50 | 6.50 | 8.00 | 10.00 |
| Reducers | " | 2.75 | 2.75 | 3.00 | 3.00 | 3.50 | 4.00 | 8.00 | 10.00 |
| Caps | " | 1.60 | 1.60 | 2.00 | 2.00 | 2.15 | 2.35 | 4.00 | 4.35 |
| Y's | " | 8.00 | 8.00 | 9.00 | 9.00 | 10.00 | 12.00 | 17.00 | 25.00 |

If with Standard Pipe Thread in one or more openings, add 25% to list.

Other Sizes Quoted on Application

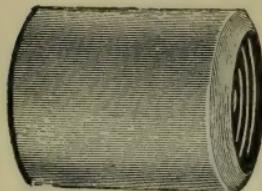
Two-hole Bushings and Cap (tapped for 2-in. or 3-in. pipe) quoted on application.

**WROUGHT FINE THREAD CASING
NIPPLES B267**

| Size | inches | 4 | 4 $\frac{1}{4}$ | 4 $\frac{1}{2}$ | 4 $\frac{3}{4}$ | 5 | 5 $\frac{5}{8}$ | 6 $\frac{1}{4}$ | 6 $\frac{5}{8}$ |
|------------------------|--------|-------|-----------------|-----------------|-----------------|-------|-----------------|-----------------|-----------------|
| Close or short | each | 2.35 | 2.40 | 2.40 | 2.45 | 2.55 | 3.25 | 3.45 | 4.50 |
| Shoulder or long | " | 2.50 | 2.60 | 2.60 | 2.70 | 2.85 | 3.50 | ..... | ..... |
| 6 inches long ..... | " | ..... | ..... | ..... | ..... | ..... | 3.80 | 4.80 | ..... |
| 7 inches long | " | 2.60 | 2.70 | 2.70 | 2.80 | 2.95 | 3.65 | 4.00 | 5.05 |
| 8 inches long | " | 2.75 | 2.80 | 2.80 | 2.95 | 3.10 | 3.80 | 4.20 | 5.30 |

**CASING COUPLING B268****WROUGHT, FOR FINE THREAD WELL
CASING**

| Nom. Inside Diam. Casing Inches | Outside Diam. Coupling Inches | Price Each | Nom. Inside Diam. Casing Inches | Outside Diam. Coupling Inches | Price Each |
|---------------------------------------|-------------------------------------|---------------|---------------------------------------|-------------------------------------|---------------|
| 2 | 2 $\frac{11}{16}$ | .16 | 4 $\frac{1}{4}$ | 5 $\frac{13}{16}$ | .85 |
| 2 $\frac{1}{2}$ | 3 $\frac{1}{4}$ | .20 | 5 | 5 $\frac{1}{2}$ | .90 |
| 2 $\frac{1}{2}$ | 3 $\frac{11}{16}$ | .25 | 5 $\frac{3}{16}$ | 6 $\frac{5}{16}$ | 1.00 |
| 2 $\frac{1}{2}$ | 3 $\frac{1}{2}$ | .30 | 5 $\frac{5}{8}$ | 6 $\frac{3}{8}$ | 1.20 |
| 3 | 3 $\frac{1}{4}$ | .35 | 6 $\frac{1}{2}$ | 7 $\frac{3}{16}$ | 1.35 |
| 3 $\frac{1}{4}$ | 4 $\frac{1}{16}$ | .40 | 6 $\frac{5}{8}$ | 7 $\frac{15}{32}$ | 1.50 |
| 3 $\frac{1}{2}$ | 4 $\frac{19}{32}$ | .46 | 7 $\frac{1}{4}$ | 8 $\frac{7}{32}$ | 1.65 |
| 3 $\frac{1}{2}$ | 4 $\frac{1}{2}$ | .52 | 7 $\frac{1}{2}$ | 8 $\frac{1}{2}$ | 1.75 |
| 4 | 4 $\frac{1}{2}$ | .60 | 8 $\frac{1}{4}$ | 9 $\frac{1}{16}$ | 2.25 |
| 4 $\frac{1}{2}$ | 5 $\frac{3}{16}$ | .68 | 8 $\frac{1}{2}$ | 9 $\frac{3}{16}$ | 2.85 |
| 4 $\frac{1}{2}$ | 5 $\frac{1}{2}$ | .80 | 9 $\frac{1}{8}$ | 10 $\frac{1}{16}$ | 3.95 |



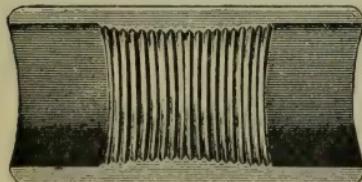
B271

WROUGHT IRON PIPE COUPLINGS

PLAIN

| Size.....inches | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|-----------------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|-----------------|-----------------|------------------|-----------------|-----------------|
| Black.....each | .05 | .05 | .06 | .07 | .10 | .13 | .17 | .21 | .28 | .40 | .60 |
| Galvanized...." | .06 | .06 | .08 | .10 | .13 | .18 | .25 | .32 | .40 | .55 | .80 |
| R. and L. Black " | .07 | .07 | .08 | .11 | .15 | .20 | .25 | .30 | .50 | .85 | 1.20 |
| Outside diam., inches | $\frac{19}{32}$ | $\frac{25}{32}$ | $\frac{29}{32}$ | $1\frac{3}{32}$ | $1\frac{11}{32}$ | $1\frac{21}{32}$ | 2 | $2\frac{9}{32}$ | $2\frac{13}{16}$ | $3\frac{9}{32}$ | $4\frac{1}{64}$ |
| Threads, per in..... | 27 | 18 | 18 | 14 | 14 | $11\frac{1}{2}$ | $11\frac{1}{2}$ | $11\frac{1}{2}$ | $11\frac{1}{2}$ | 8 | 8 |

| Size.....inches | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
|----------------------|----------------|-----------------|------------------|----------------|------------------|------------------|-----------------|-------------------|-----------------|-------------------|
| Black.....each | .80 | 1.00 | 1.50 | 1.65 | 2.40 | 3.25 | 4.25 | 5.50 | 7.50 | 10.00 |
| Galvanized...." | 1.05 | 1.40 | 2.00 | 2.25 | 3.25 | .... | .... | .... | .... | .... |
| R. and L. Black " | 1.60 | 2.00 | .... | .... | .... | .... | .... | .... | .... | .... |
| Outside diam., ins. | $4\frac{1}{2}$ | $5\frac{3}{32}$ | $5\frac{17}{32}$ | $6\frac{1}{4}$ | $7\frac{11}{32}$ | $8\frac{11}{32}$ | $9\frac{7}{16}$ | $10\frac{15}{32}$ | $11\frac{1}{2}$ | $13\frac{33}{32}$ |
| Threads, per in..... | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |



B272

LONG WROUGHT IRON RECESSED COUPLING

FOR TUBULAR WELL USES, ETC.

HYDRAULIC COUPLING—RECESSED

| Pipe Size....inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 |
|---------------------|---------------|---------------|------|----------------|----------------|------|----------------|------|----------------|------|
| Black.....each | .25 | .30 | .35 | .45 | .55 | .70 | .95 | 1.40 | 1.85 | 2.25 |
| Galvanized..." | .30 | .35 | .40 | .55 | .70 | .90 | 1.20 | 1.70 | 2.15 | 3.25 |
| Length ....inches | 1.88 | 2.13 | 2.38 | 2.63 | 2.94 | 3.13 | 3.50 | 3.69 | 4.25 | 4.25 |

Diameter is about the same as Standard Couplings B271. Hydraulic Couplings have same number of threads to the inch as the Standard Coupling B271.

WROUGHT RECESSED COUPLINGS

FOR GAS AND OIL WELL TUBING, DRIVE PIPE, AND LINE PIPE

B273

| Size .....,inches | 2 | $2\frac{1}{2}$ | 3 | 4 | 5 | 6 | 8 | 10 | 12 |
|-------------------|-----|----------------|------|------|------|------|------|------|-------|
| Black.....each | .40 | .60 | .80 | 1.50 | 2.40 | 2.80 | 4.00 | 6.00 | 8.00 |
| Galvanized...." | .57 | .85 | 1.15 | 2.15 | 3.45 | 4.00 | 5.80 | 8.75 | 11.15 |



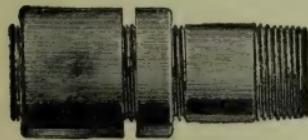
WROUGHT SWEDGE NIPPLES

B274

| Size Inches | Price Black Each | Size Inches | Price Black Each | Size Inches | Price Black Each | Size Inches | Price Black Each |
|----------------|------------------------|----------------|------------------------|----------------|------------------------|----------------|------------------------|
| 2 x 1 | \$1.15 | 4 x 2½ | \$2.50 | 5 x 4½ | \$3.00 | 8 x 4 | \$8.25 |
| 2 x 1¼ | 1.10 | 4 x 3 | 2.25 | 6 x 2 | 5.50 | 8 x 6 | 7.50 |
| 2 x 1½ | 1.00 | 4 x 3½ | 2.15 | 6 x 2½ | 5.25 | 10 x 4 | 15.00 |
| 2½ x 1½ | 1.25 | 4½ x 2 | 3.00 | 6 x 3 | 5.10 | 10 x 6 | 13.50 |
| 2½ x 2 | 1.15 | 4½ x 2½ | 2.85 | 6 x 3½ | 5.00 | 10 x 8 | 12.00 |
| 3 x 1½ | 2.00 | 4½ x 3 | 2.75 | 6 x 4 | 4.75 | 12 x 4 | 22.00 |
| 3 x 2 | 1.75 | 4½ x 4 | 2.50 | 6 x 4½ | 4.50 | 12 x 6 | 20.00 |
| 3 x 2½ | 1.65 | 5 x 2 | 4.00 | 6 x 5 | 4.25 | 12 x 8 | 18.25 |
| 3½ x 2 | 2.00 | 5 x 2½ | 3.75 | 7 x 4 | 6.75 | 12 x 10 | 16.75 |
| 3½ x 2½ | 1.85 | 5 x 3 | 3.50 | 7 x 5 | 6.50 | ..... | ..... |
| 3½ x 3 | 1.75 | 5 x 3½ | 3.35 | 7 x 6 | 6.00 | ..... | ..... |
| 4 x 2 | 2.75 | 5 x 4 | 3.25 | 8 x 2 | 8.50 | ..... | ..... |

For Wedged Nipples with Casing Thread, Use Pipe Size List as Follows

| | | | | | | | | | | | | | | | |
|---------------------|---|----|----|----|---|----|----|----|---|-------|-------|-------|-------|-------|-------|
| Casing Size, inches | 3 | 3½ | 3½ | 3¾ | 4 | 4½ | 4½ | 4¾ | 5 | 5 5/8 | 5 5/8 | 6 1/4 | 6 5/8 | 7 5/8 | 8 1/4 |
| Pipe Size....inches | 3 | 3½ | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 6 | 6 | 6 | 8 | 8 | 8 |



LONG SCREW

WITH COUPLING AND LOCK-NUT FACED

B275

| | | | | | | | | | | | | |
|----------------|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| Size....inches | ¼ | ¾ | ½ | ¾ | 1 | 1¼ | 1¼ | 2 | 2½ | 3 | 3½ | 4 |
| Black....each | .30 | .35 | .40 | .55 | .75 | 1.00 | 1.30 | 1.70 | 2.70 | 3.70 | 5.40 | 6.60 |
| Galv...." | .35 | .40 | .50 | .66 | 1.00 | 1.25 | 1.60 | 2.10 | 3.10 | 4.70 | 6.75 | 8.25 |
| Length, inches | 3½ | 4 | 4½ | 5 | 5½ | 6 | 6½ | 7 | 7½ | 8 | 8½ | 9 |

LOCK-NUT NIPPLES

Made to Order and Charged at Special Net Prices

STANDARD THREADS ON WROUGHT PIPE

| | | | | | | | | | | | |
|-------------|-----|-----|-----|-----|-----|-----|-------|-------|------|-------|------|
| Inches..... | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 |
| Each..... | .05 | .05 | .05 | .05 | .05 | .06 | .07 | .08 | .10 | .15 | .20 |
| Inches..... | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 | 9 | 10 | 12 | 14 |
| Each..... | .25 | .35 | .45 | .55 | .70 | .85 | 1.00 | 1.25 | 1.50 | 2.50 | 3.50 |

Casing Threads, 3 and 3½ in., 35c.; 4 and 4½ in., 50c.; 5 5/8, 6, and 6 1/4 in., \$1.00.

LOCK-NUT THREADS

| | | | | | | | | | | | | |
|------------|-----|-----|-----|-----|-----|-------|-------|-----|-------|-----|-------|-----|
| Inches.... | 1/4 | 3/8 | 1/2 | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 3 1/2 | 4 |
| Each..... | .10 | .10 | .10 | .10 | .12 | .14 | .16 | .20 | .30 | .40 | .50 | .70 |

WROUGHT NIPPLES**CLOSE NIPPLE**

B277

LONG OR SHOULDER NIPPLE

B278

STANDARD LIST

(Stock Length.)

BLACK RIGHT-HAND NIPPLES

| Pipe Size. Inches | Lengths | | Lengths | | | PRICE | PRICE OF EXTRA LONG NIPPLES. | | | | | | | | | | | |
|----------------------|---------|-------|-----------------|-------|-------|-------|------------------------------|----|-----|-----|-----|------|------|-------|-------|-------|-------|-------|
| | Close | Short | Long Nipples | | | | LENGTH—INCHES | | | | | | | | | | | |
| | | | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | | |
| 1/8 | 1 1/2 | .04 | 2 | 2½ | 3 | 3½ | .06 | | .07 | .08 | .10 | .12 | .14 | .15 | .17 | .18 | .19 | |
| 1/4 | 1 1/2 | .04 | 2 | 2½ | 3 | 3½ | .06 | | .07 | .08 | .10 | .12 | .14 | .15 | .17 | .18 | .19 | |
| 5/16 | 1 1/2 | .04 | 2 | 2½ | 3 | 3½ | .06 | | .07 | .08 | .10 | .12 | .14 | .15 | .17 | .18 | .19 | |
| 1 | 1 1/2 | .04 | 2 | 2½ | 3 | 3½ | .06 | | .07 | .08 | .10 | .12 | .14 | .15 | .17 | .18 | .19 | |
| 1 1/2 | 1 1/2 | .05 | 2 | 2½ | 3 | 3½ | .07 | | .08 | .10 | .12 | .14 | .16 | .18 | .20 | .22 | .23 | |
| 3/4 | 1 1/2 | .06 | 2 | 2½ | 3 | 3½ | .09 | | | .11 | .13 | .17 | .18 | .20 | .22 | .24 | .26 | |
| 1 | 1 1/2 | .08 | 2 | 2½ | 3 | 3½ | .13 | | | .15 | .18 | .23 | .25 | .28 | .31 | .34 | .36 | |
| 1 1/4 | 1 1/2 | .11 | 3 | 3½ | 4 | 4½ | .17 | | | .20 | .24 | .29 | .33 | .36 | .40 | .44 | .47 | |
| 1 1/2 | 1 1/2 | .13 | 3 | 3½ | 4 | 4½ | .20 | | | .25 | .29 | .36 | .40 | .45 | .50 | .54 | .59 | |
| 2 | 2 | .18 | 3 | 3½ | 4 | 4½ | .27 | | | .32 | .38 | .50 | .54 | .59 | .65 | .72 | .77 | |
| 2 1/2 | 3 | .39 | 3½ | 4 | 4½ | 5 | .59 | | | | .68 | .90 | .97 | 1.06 | 1.17 | 1.26 | 1.35 | |
| 3 | 2 1/2 | .48 | 3½ | 4 | 4½ | 5 | .72 | | | | .85 | 1.08 | 1.20 | 1.33 | 1.45 | 1.58 | 1.70 | |
| 3 1/2 | 2 1/2 | .75 | 4 1/2 | 5 | 5 1/2 | 6 | 1.05 | | | | | 1.30 | 1.45 | 1.60 | 1.75 | 1.90 | 2.05 | |
| 4 | 3 | 1.85 | 4 1/2 | 5 | 5 1/2 | 6 | 1.20 | | | | | 1.52 | 1.69 | 1.87 | 2.05 | 2.22 | 2.40 | |
| 4 1/2 | 3 | 1.25 | 4 1/2 | 5 | 5 1/2 | 6 | 1.70 | | | | | 2.25 | 2.50 | 2.75 | 2.95 | 3.17 | 3.40 | |
| 5 | 3 1/2 | 1.55 | 5 | 5 1/2 | 6 | 6 1/2 | 2.45 | | | | | 2.58 | 2.83 | 3.10 | 3.35 | 3.60 | 3.85 | |
| 6 | 3 1/2 | 1.85 | 5 | 5 1/2 | 6 | 6 1/2 | 2.90 | | | | | 3.05 | 3.35 | 3.70 | 4.00 | 4.30 | 4.65 | |
| 7 | 3 1/2 | 5 | 3.20 | | | | | | | | | 3.60 | 4.05 | 4.45 | 4.90 | 5.30 | 5.75 | 6.15 |
| 8 | 3 1/2 | 5 | 3.55 | | | | | | | | | 4.05 | 4.55 | 5.05 | 5.50 | 6.00 | 6.50 | 7.00 |
| 9 | 4 | 5 | 5.25 | | | | | | | | | | 6.50 | 7.10 | 7.75 | 8.40 | 9.00 | |
| 10 | 4 | 5 | 6.75 | | | | | | | | | | | 8.25 | 8.90 | 9.70 | 10.40 | 11.15 |
| 12 | 4 | 5 | 8.00 | | | | | | | | | | | 10.00 | 10.80 | 11.75 | 12.70 | 13.65 |

Special Lengths not listed above made to order at special net prices. Longer than 12 inches, charged as cut pipe and threads.

EXTRA HEAVY NIPPLES

Take double the Standard list. Discount is special, depending on quantity ordered



WROUGHT NIPPLES

RIGHT AND LEFT, BLACK

B279

| Pipe Size Inches | Lengths | | Lengths | | PRICE | PRICE OF EXTRA LONG NIPPLES | | | | | | | | | | | |
|---------------------|---------|-------|--------------|-------|-------|-----------------------------|----------------|------|-----|-----|------|------|------|------|------|------|------|
| | Close | Short | Long Nipples | | | PRICE | Length, Inches | | | | | | | | | | |
| | | | 2 | 2½ | 3 | 3½ | 4 | 5 | 6 | 7 | 8 | 9 | 10 | c 11 | 12 | | |
| 1/2 | 3/4 | 1 1/2 | .05 | 2 | 2½ | 3 | 3½ | .08 | .09 | .11 | .13 | .16 | .18 | .20 | .23 | .25 | .27 |
| 3/4 | 7/8 | 1 1/2 | .05 | 2 | 2½ | 3 | 3½ | .08 | .09 | .11 | .13 | .16 | .18 | .20 | .23 | .25 | .27 |
| 1 | 1 | 1 1/2 | .05 | 2 | 2½ | 3 | 3½ | .08 | .09 | .11 | .13 | .16 | .18 | .20 | .23 | .25 | .27 |
| 5/8 | 1 1/8 | 1 1/2 | .07 | 2 | 2½ | 3 | 3½ | .10 | .11 | .13 | .16 | .18 | .21 | .24 | .27 | .29 | .31 |
| 3/8 | 1 3/8 | 2 | .08 | 2½ | 3 | 3½ | 4 | .12 | .. | .15 | .17 | .23 | .25 | .27 | .29 | .32 | .35 |
| 1 | 1 1/2 | 2 | .11 | 2½ | 3 | 3½ | 4 | .18 | .. | .20 | .24 | .31 | .33 | .37 | .41 | .45 | .48 |
| 1 1/8 | 1 5/8 | 2 1/2 | .15 | 3 | 3½ | 4 | 4 1/2 | .23 | .. | .27 | .32 | .39 | .45 | .50 | .55 | .60 | .65 |
| 1 1/2 | 1 9/16 | 2 1/2 | .18 | 3 | 3½ | 4 | 4 1/2 | .27 | .. | .34 | .39 | .48 | .52 | .60 | .67 | .72 | .80 |
| 2 | 2 | 2 1/2 | .24 | 3 | 3½ | 4 | 4 1/2 | .36 | .. | .43 | .51 | .67 | .72 | .80 | .87 | .96 | 1.03 |
| 2 1/2 | 2 1/2 | 3 | .52 | 3 1/2 | 4 | 4 1/2 | 5 | .79 | .. | .. | .91 | 1.20 | 1.30 | 1.40 | 1.55 | 1.68 | 1.80 |
| 3 | 2 1/2 | 3 | .65 | 3 1/2 | 4 | 4 1/2 | 5 | .96 | .. | .. | 1.13 | 1.44 | 1.60 | 1.77 | 1.93 | 2.10 | 2.27 |
| 3 1/2 | 2 3/4 | 4 | 1.00 | 4 1/2 | 5 | 5 1/2 | 6 | 1.40 | .. | .. | 1.75 | 1.95 | 2.15 | 2.35 | 2.55 | 2.75 | |
| 4 | 3 | 4 | 1.15 | 4 1/2 | 5 | 5 1/2 | 6 | 1.60 | .. | .. | 2.00 | 2.25 | 2.50 | 2.75 | 3.00 | 3.25 | |

Add 60 per cent to above prices for Galvanized Right and Left Nipples and discount is special according to quantity ordered.

GALVANIZED NIPPLES, RIGHT HAND

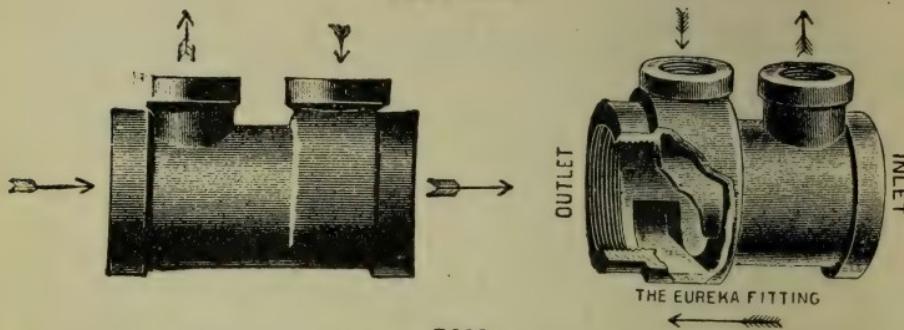
B280

| Pipe Size Inches | Lengths | | Lengths | | PRICE | PRICE OF EXTRA LONG NIPPLES | | | | | | | | | | | |
|---------------------|---------|-------|--------------|-------|-------|-----------------------------|----------------|------|-----|-----|------|------|------|------|------|-------|-------|
| | Close | Short | Long Nipples | | | PRICE | Length, Inches | | | | | | | | | | |
| | | | 2 | 2½ | 3 | 3½ | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | | |
| 1/2 | 3/4 | 1 1/2 | .06 | 2 | 2½ | 3 | 3½ | .11 | .12 | .15 | .17 | .21 | .24 | .26 | .29 | .31 | .34 |
| 3/4 | 7/8 | 1 1/2 | .06 | 2 | 2½ | 3 | 3½ | .11 | .12 | .15 | .17 | .21 | .24 | .26 | .29 | .31 | .34 |
| 5/8 | 1 1/8 | 1 1/2 | .06 | 2 | 2½ | 3 | 3½ | .11 | .12 | .15 | .17 | .21 | .24 | .26 | .29 | .31 | .34 |
| 1 | 1 | 1 1/2 | .06 | 2 | 2½ | 3 | 3½ | .11 | .13 | .16 | .18 | .23 | .26 | .28 | .31 | .33 | .36 |
| 5/8 | 1 1/8 | 1 1/2 | .06 | 2 | 2½ | 3 | 3½ | .11 | .13 | .16 | .18 | .23 | .26 | .28 | .31 | .33 | .36 |
| 3/4 | 1 3/8 | 2 | .08 | 2½ | 3 | 3½ | 4 | .14 | .. | .18 | .21 | .26 | .29 | .32 | .35 | .38 | .41 |
| 1 | 1 1/2 | 2 | .11 | 2½ | 3 | 3½ | 4 | .19 | .. | .24 | .28 | .34 | .38 | .42 | .47 | .51 | .55 |
| 1 1/8 | 1 5/8 | 2 1/2 | .17 | 3 | 3½ | 4 | 4 1/2 | .29 | .. | .32 | .38 | .45 | .51 | .57 | .63 | .69 | .75 |
| 1 1/2 | 1 9/16 | 2 1/2 | .21 | 3 | 3½ | 4 | 4 1/2 | .35 | .. | .39 | .46 | .55 | .63 | .70 | .77 | .84 | .91 |
| 2 | 2 | 2 1/2 | .27 | 3 | 3½ | 4 | 4 1/2 | .47 | .. | .52 | .61 | .74 | .83 | .93 | 1.03 | 1.13 | 1.23 |
| 2 1/2 | 2 1/2 | 3 | .56 | 3 1/2 | 4 | 4 1/2 | 5 | .86 | .. | .. | 1.00 | 1.26 | 1.41 | 1.56 | 1.71 | 1.86 | 2.01 |
| 3 | 2 1/2 | 3 | .70 | 3 1/2 | 4 | 4 1/2 | 5 | 1.10 | .. | .. | 1.30 | 1.60 | 1.80 | 2.00 | 2.20 | 2.40 | 2.60 |
| 3 1/2 | 2 3/4 | 4 | 1.20 | 4 1/2 | 5 | 5 1/2 | 6 | 1.70 | .. | .. | 2.10 | 2.35 | 2.60 | 2.85 | 3.13 | 3.40 | |
| 4 | 3 | 4 | 1.35 | 4 1/2 | 5 | 5 1/2 | 6 | 1.87 | .. | .. | 2.30 | 2.60 | 2.90 | 3.20 | 3.50 | 3.80 | |
| 4 1/2 | 3 | 4 | 1.85 | 4 1/2 | 5 | 5 1/2 | 6 | 2.60 | .. | .. | 3.30 | 3.65 | 4.05 | 4.45 | 4.85 | 5.25 | |
| 5 | 3 1/4 | 4 1/2 | 2.30 | 5 | 5 1/2 | 6 | 6 1/2 | 3.15 | .. | .. | 3.75 | 4.20 | 4.60 | 5.00 | 5.40 | 5.85 | |
| 6 | 3 1/4 | 4 1/2 | 2.80 | 5 | 5 1/2 | 6 | 6 1/2 | 4.25 | .. | .. | 4.50 | 5.00 | 5.55 | 6.05 | 6.60 | 7.15 | |
| 7 | 3 1/2 | 5 | 4.25 | .. | .. | .. | .. | .. | .. | .. | 4.95 | 5.60 | 6.35 | 7.05 | 7.75 | 8.45 | 9.20 |
| 8 | 3 1/2 | 5 | 5.00 | .. | .. | .. | .. | .. | .. | .. | 5.80 | 6.65 | 7.50 | 8.35 | 9.25 | 10.10 | 10.95 |

Discount is special, according to quantity ordered.

**"EUREKA" COMBINATION CIRCULATION FITTING
FOR SINGLE PIPE HOT WATER WORK**

CAST IRON



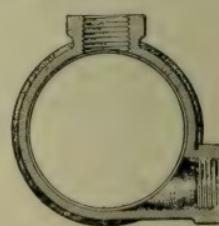
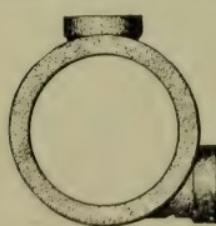
B283

| Size of Main | inches | 2 | 2½ | 3 | 3 | 3½ | 4 |
|-------------------------------------|--------|---------|--------|--------|------|--------|--------|
| Size of Branches..... | inches | ¾ to 1½ | ¾ to 2 | ¾ to 2 | 2½ | ¾ to 2 | ¾ to 2 |
| Length, End to End..... | " | 8½ | 8½ | 9¼ | 10½ | 9¼ | 9¼ |
| Center to Center Branches... "..... | each | 4½ | 4½ | 4½ | 5¾ | 4½ | 4½ |
| Price..... | each | .90 | 1.30 | 1.50 | 1.90 | 1.90 | 2.20 |

| Size of Main..... | inches | 4 | 4½ | 4½ | 5 | 5 | 6 |
|-------------------------------------|--------|------|--------|------|--------|------|--------|
| Size of Branches..... | inches | 2½ | 1 to 2 | 2½ | 1 to 2 | 2½ | 1 to 2 |
| Length, End to End..... | " | 11½ | 9¼ | 11½ | 9¼ | 11½ | 9¼ |
| Center to Center Branches... "..... | each | 5¾ | 4½ | 5¾ | 4½ | 5¾ | 4½ |
| Price..... | each | 3.20 | 3.20 | 3.70 | 3.70 | 4.90 | 4.90 |

The "Eureka" Combination Circulation Fitting is designed to take the place of the usual ell's, tees, and nipples commonly employed in taking branches from the main flow pipe of a single hot water pipe system. A reference to the sectional view will show the construction. The hot water is taken from the top of the fitting, and, passing through the radiators, is returned through an especially devised channel in the fitting in such a manner that it flows to the cool strata in the lower side of the pipe.

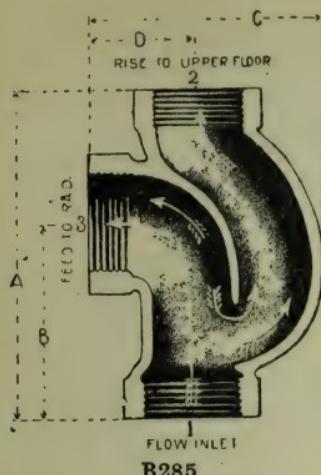
PHELPS IDEAL SINGLE MAIN CIRCULATING HOT WATER FITTING



B284

All Fittings are tapped one and one fourth inch flow and return. Where smaller connection is desired, use nipple and reducing elbow, or use bushing. Factory will tap fittings for one and one half inch flow and return for 10 cents additional to above list for each Fitting so tapped.

| Size of Run..... | inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 |
|------------------|--------|------|------|------|------|------|------|------|
| Price..... | each | 1.25 | 1.25 | 1.50 | 2.00 | 2.50 | 3.00 | 3.50 |



THE O. S. DISTRIBUTING FITTING

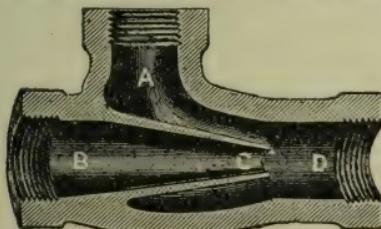
The (No. 1) bottom opening is always the largest, and governs prices of fitting. The openings read in order shown, No. 1, No. 2, and No. 3.

| | | | | | | |
|------------|--------|-----|----------------|----------------|------|----------------|
| Size | inches | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ |
| Price..... | each | .60 | .80 | .90 | 1.20 | 2.00 |

LIST OF SIZES

| 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
|---------------------|-------------------------------|---|---------------------------------|------------------|---|---------------------------------|------------------|------------------|---------------------------------|------------------|------------------|
| 1 x $\frac{3}{4}$ | $\frac{3}{4}$ x $\frac{3}{4}$ | | $1\frac{1}{4}$ x $1\frac{1}{4}$ | x $1\frac{1}{4}$ | | $1\frac{1}{2}$ x $1\frac{1}{4}$ | $x 1\frac{1}{2}$ | $x 1\frac{1}{2}$ | 2 x $1\frac{1}{2}$ | $x 1\frac{1}{2}$ | $x 1\frac{1}{2}$ |
| 1 x $\frac{3}{4}$ | $\frac{3}{4}$ x 1 | | $1\frac{1}{4}$ x $1\frac{1}{4}$ | $x 1\frac{1}{4}$ | | $1\frac{1}{2}$ x $1\frac{1}{2}$ | $x 1\frac{1}{4}$ | $x 1\frac{1}{4}$ | 2 x 2 | $x 1\frac{1}{4}$ | |
| 1 x 1 | $\frac{3}{4}$ | | $1\frac{1}{2}$ x $1\frac{1}{4}$ | $x 1\frac{1}{4}$ | | $1\frac{1}{2}$ x $1\frac{1}{2}$ | $x 1\frac{1}{2}$ | $x 1\frac{1}{2}$ | 2 x 2 | $x 1\frac{1}{2}$ | |
| 1 x 1 | x 1 | | $1\frac{1}{2}$ x 1 | $x 1\frac{1}{4}$ | | 2 | $x 1\frac{1}{4}$ | $x 1\frac{1}{2}$ | 2 | x 2 | x 2 |
| $1\frac{1}{4}$ x 1 | x 1 | | $1\frac{1}{2}$ x $1\frac{1}{4}$ | $x 1\frac{1}{4}$ | | 2 | $x 1\frac{1}{2}$ | $x 1\frac{1}{4}$ | $2\frac{1}{2}$ x $1\frac{1}{2}$ | $x 1\frac{1}{2}$ | |
| $1\frac{1}{4}$ x 1 | $x 1\frac{1}{4}$ | | $1\frac{1}{2}$ x $1\frac{1}{4}$ | $x 1\frac{1}{4}$ | | 2 | $x 1\frac{1}{2}$ | $x 1\frac{1}{4}$ | $2\frac{1}{2}$ x 2 | $x 1\frac{1}{2}$ | |

McDANIEL'S PATENT SUCTION TEE



A—Is inlet from coils.

B—Is main waste, working the suction.

C—End of suction pipe.

D—Outlet or return to waste.

| | | | | | | | | |
|-----------------|--------|---------------|------|----------------|----------------|------|----------------|------|
| Size..... | inches | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
| Black Iron..... | each | .80 | 1.00 | 1.25 | 1.50 | 2.00 | 2.50 | 3.00 |

EXTRA HEAVY TEES, AT SPECIAL PRICE

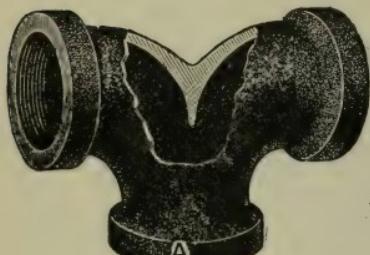
The suction tee can be used in all cases where a common tee is put on a waste or return pipe. The advantage of them can be seen at once. When put on a pipe draining radiators, by having a suction tee to each radiator, one can not back up the condensation on another, as by their use the strongest one can be used to drain the weaker, instead of backing up on it and causing it to snap and crack. In connecting returns to a steam trap, connect all through suction tees or fittings and they can not back up. Where two dry-rooms connect on the same waste, the stronger will drain the weaker, and where coils are on each side of a room one side can be made to drain the other.

TWIN ELLS

For use instead of Branch Headers on Heating Boilers.

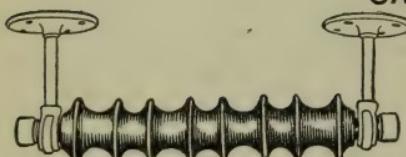
(See also Double Branch Ells, B244.)

Always read the large bottom opening (A) first.



B287

| Size, 1 x $\frac{3}{4}$ | in. Branches, each | \$ | Branches, each | in. Size, 1 x $\frac{3}{4}$ | \$ |
|---|--------------------|------|----------------|-----------------------------|----|
| " 1 $\frac{1}{4}$ x1 | " " | .52 | " " | " .52 | |
| " 1 $\frac{1}{2}$ x1 $\frac{1}{4}$ | " " | .68 | " " | " .68 | |
| " 2 x1 $\frac{1}{2}$ | " " | .90 | " " | " .90 | |
| " 2 $\frac{1}{2}$ x2 | " " | 1.50 | " " | " 1.50 | |
| " 3 x2 $\frac{1}{2}$ | " " | 2.25 | " " | " 2.25 | |
| " 3 $\frac{1}{2}$ x3 or 2 $\frac{1}{2}$ " | " " | 3.00 | " " | " 3.00 | |
| " 4 x3 or 2 $\frac{1}{2}$ " | " " | 3.75 | " " | " 3.75 | |
| " 5 x3 $\frac{1}{2}$ or 3" | " " | 6.75 | " " | " 6.75 | |
| " 5 x4 | " " | 6.75 | " " | " 6.75 | |
| " 6 x5 | " " | 9.75 | " " | " 9.75 | |

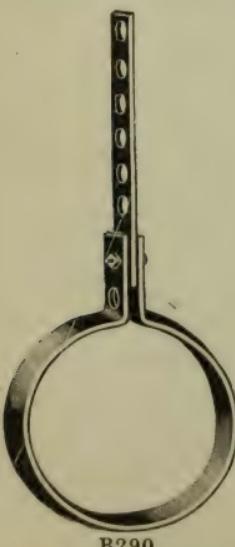
**HANGER ROLLS
CAST IRON**

B288



B289

| Size.....in. | 1 | 1 $\frac{1}{4}$ | 1 $\frac{1}{2}$ | 2 | 2 $\frac{1}{2}$ | 3 | 3 $\frac{1}{2}$ | 4 | 4 $\frac{1}{2}$ | 5 | 6 | 7 | 8 | 10 | 12 | 14 |
|----------------|-----|-----------------|-----------------|-----|-----------------|-----|-----------------|-----|-----------------|-----|-----|-----|-----|-----|------|------|
| Rolls only.ea. | .06 | .07 | .08 | .12 | .12 | .12 | .21 | .21 | .24 | .24 | .27 | .36 | .44 | .72 | 1.05 | 1.32 |

**STEEL BAND PIPE HANGERS
FOR STEAM AND SOIL PIPES**

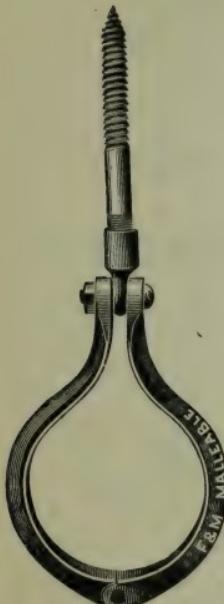
| Size | inches | $\frac{3}{4}$ | 1 | 1 $\frac{1}{4}$ | 1 $\frac{1}{2}$ | 2 | 2 $\frac{1}{2}$ | 3 |
|------------------|--------|----------------|-----|-----------------|-----------------|-----|-----------------|------|
| Black.....each | | .16 | .18 | .20 | .22 | .24 | .26 | .28 |
| Galvanized....." | | .24 | .27 | .30 | .33 | .36 | .40 | .42 |
| Size | inches | $3\frac{1}{2}$ | 4 | 4 $\frac{1}{2}$ | 5 | 6 | 7 | 8 |
| Black.....each | | .32 | .34 | .36 | .38 | .42 | .45 | .48 |
| Galvanized....." | | .48 | .50 | .54 | .56 | .63 | .95 | .135 |

STEEL EXTENSION BAR, B291

| Size and Gauge..... | $\frac{3}{8}$ in. 14 Ga. | 1 in. 12 Ga. | 1 $\frac{1}{8}$ in. 10 Ga. |
|-------------------------|--------------------------|----------------------|----------------------------|
| Black.....per foot | .08 | .09 | .10 |
| For Hangers..size, ins. | $\frac{1}{2}$ to 2 | 2 $\frac{1}{2}$ to 4 | 5 to 8 |

B290

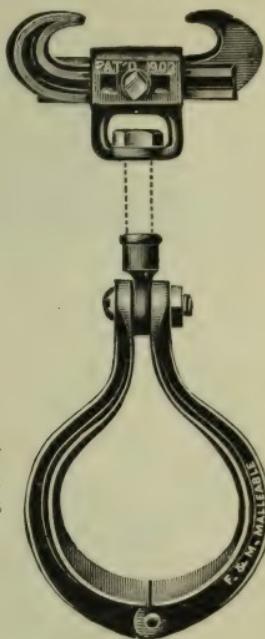
SECTIONAL EXPANSION PIPE HANGERS



B292

**MALLEABLE
X L
HANGERS**

B292 can be furnished, less Screw is B292 $\frac{1}{2}$; or (if for use with B291 Exten. Bar) less Screw and Socket is B292 $\frac{1}{2}$.



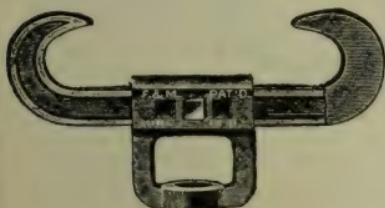
B293

| Size..... | $\frac{3}{4}$ -1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ | 5 | 6 | 7 | 8 | 10 |
|------------------------|------------------|----------------|----------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|---------------|---------------|---------------|---------------|
| *Screw...in. | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{1}{4}$ | $\frac{1}{4}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{3}{8}$ | $\frac{3}{8}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ |
| B292.... | .18 | .20 | .22 | .25 | .30 | .35 | .50 | .60 | .65 | .70 | .90 | 1.20 | 1.40 | 1.80 |
| B293.... | .58 | .60 | .62 | .65 | .70 | .75 | .90 | 1.00 | 1.05 | 1.10 | 1.30 | 1.60 | 1.80 | 2.00 |
| B292 $\frac{1}{2}$... | .12 | .14 | .16 | .18 | .22 | .28 | .43 | .53 | .58 | .63 | .82 | 1.12 | 1.32 | 1.72 |
| B292 $\frac{1}{2}$... | .10 | .12 | .14 | .16 | .20 | .25 | .40 | .50 | .55 | .60 | .80 | 1.10 | 1.30 | ... |

*Thread on lower end of lag screw is a pipe thread, so that hanger can be lengthened with piece of pipe and a coupling.

**PRICE LIST HANNA "B. J." HANGER, WITH LAG SCREW
B294**

| Size.... inches | $\frac{3}{4}$ -1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | 5 | 6 | 7 | 8 | 10 | 12 |
|-----------------|------------------|----------------|----------------|---------------|----------------|---------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Screw.... inch | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{1}{6}$ | $\frac{1}{4}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{3}{8}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ |
| Each..... | .18 | .20 | .22 | .25 | .30 | .35 | .37 | .45 | .58 | .70 | 1.05 | 1.20 | 1.60 | 1.90 |



B296

**ADJUSTABLE MALLEABLE
BEAM CLAMP**

| | |
|---|-----|
| No. 1 for 3 in. and Smaller Pipe...ea. | .40 |
| No. 2 for 3 $\frac{1}{2}$ in. and Larger Pipe...“ | .60 |

Hole in No. 1 for $\frac{1}{8}$ or $\frac{1}{4}$ pipe, in No. 2 for $\frac{3}{16}$ or $\frac{1}{2}$ inch pipe.

Adjustable to Beam Flanges 3 inches to 7 inches wide.

"ABC" Beam Clamps quoted on application.

EXPANSION RING PIPE HANGERS

COMMON



B297

WESTERN

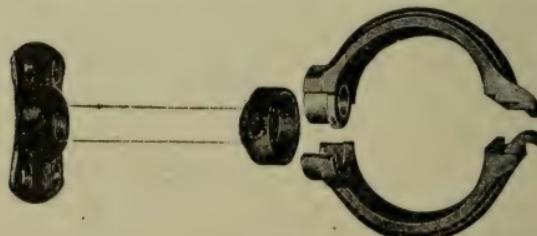


B298

| Size.....inches | $\frac{1}{2}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{4}$ | 3 | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ | 5 | 6 | 7 | 8 |
|-----------------------|---------------|---------------|----------------|----------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|---------------|---------------|---------------|
| Price.....each | .17 | .18 | .19 | .25 | .29 | .36 | .44 | .55 | .63 | .90 | 1.12 | 1.35 | 1.80 | 2.25 |
| Threaded for pipe.... | $\frac{3}{8}$ | $\frac{3}{8}$ | $\frac{3}{8}$ | $\frac{3}{8}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ |

Price includes ring, button and plate.

CRANE EXPANSION PIPE HANGER



B299

| Size.....inches | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{4}$ | 3 | $3\frac{1}{2}$ | 4 | 5 | 6 |
|--|---------------|---------------|----------------|----------------|---------------|----------------|---------------|----------------|---------------|---------------|---------------|
| Set.....each | .32 | .33 | .35 | .45 | .55 | .65 | .80 | 1.00 | 1.15 | 2.00 | 2.50 |
| Size of Pipe, Rings and Buttons are Tapped for.....inches | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{3}{8}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | $\frac{3}{4}$ |

GALVANIZED RING PLATES

GALVANIZED SOLID
RING

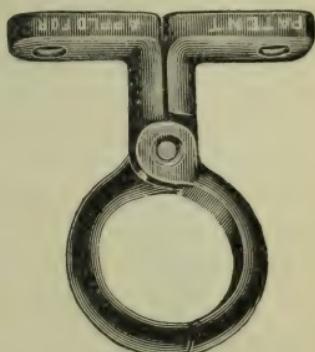
B300

EXTENSION SPLIT RING



B301 1/2

SPLIT RING



B301

PRICE PER 100

| Size..... | inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|------------------------------|--------|---------------|---------------|---------------|-------|----------------|----------------|-------|
| Solid Rings, B300..... | | 6.50 | 6.50 | 7.00 | 9.00 | 12.00 | 16.00 | 25.00 |
| Split Rings, B301..... | | 17.00 | 17.00 | 20.00 | 25.00 | 30.00 | 40.00 | 50.00 |
| Exten. Split Rings, B301 1/2 | | 25.00 | 25.00 | 30.00 | 35.00 | 40.00 | 50.00 | 60.00 |

Above hangers can be furnished black on special orders from factory. B301 1/2 can be adjusted from $2\frac{3}{4}$ inch. to 4 inch. back to centre, and by inserting a nipple and coupling the shank can be extended to any length.

Brass Hangers can also be furnished. Prices on application.

GAS PIPE HOOKS



B303

TINNED STRAPS



B302

GAS PIPE HOOKS

| Size..... | inches | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|-------------------|--------|---------------|---------------|---------------|---------------|------|----------------|----------------|------|
| Price.....per 100 | | .45 | .55 | .65 | .80 | 1.00 | 1.30 | 1.60 | 2.00 |

TINNED STRAPS

Sizes, $\frac{1}{4}$ inch to 2 inch. per pound \$0.20

STEEL HOOK PLATE



B304

| No. of Hooks | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---------------------------------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|
| $\frac{3}{4}$ -in. Pipe....each | .08 | .16 | .21 | .24 | .28 | .34 | .40 | .45 | .50 | .56 | .68 | .72 |
| 1 " " " " | .09 | .18 | .23 | .26 | .32 | .38 | .48 | .59 | .65 | .70 | .85 | 1.00 |
| $1\frac{1}{4}$ " " " " | .10 | .21 | .27 | .32 | .41 | .52 | .68 | .80 | .90 | 1.20 | 1.35 | 1.40 |
| $1\frac{1}{2}$ " " " " | .15 | .28 | .43 | .58 | .72 | .88 | 1.10 | 1.25 | 1.40 | 1.55 | 1.65 | 1.90 |

Steel Hook Plates can be readily converted to Expansion Plates by straightening the hooks. Center to center of Hooks: $\frac{3}{4}$ -in. is 2-in., $1\frac{1}{2}$ -in. is $2\frac{1}{2}$ -in., $1\frac{1}{4}$ -in. is 3-in., $1\frac{1}{2}$ -in. is $3\frac{1}{2}$ -in., 2-in. is $4\frac{1}{4}$ -in.

CAST-IRON HOOK PLATES



B305



B306

| No. of Hooks | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|------------------------------|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| $\frac{3}{4}$ -in. Pipe.each | .08 | .16 | .21 | .24 | .28 | .34 | .40 | .45 | .50 | .56 | .68 | .72 |
| 1 " " " " | .09 | .18 | .23 | .26 | .32 | .38 | .48 | .59 | .65 | .70 | .85 | 1.00 |
| $1\frac{1}{4}$ " " " " | .10 | .21 | .27 | .32 | .41 | .52 | .68 | .80 | .90 | 1.20 | 1.35 | 1.40 |
| $1\frac{1}{2}$ " " " " | .15 | .28 | .43 | .58 | .72 | .88 | 1.10 | 1.25 | 1.40 | 1.55 | 1.65 | 1.90 |
| 2 " " " " | .22 | .43 | .65 | .90 | 1.15 | 1.35 | 1.75 | 2.00 | 2.25 | 2.50 | 2.75 | 3.00 |

For Center to Center measure see note under Steel Hook Plate, above.

Expansion Hook Plate



B307

Beam Hook



B308

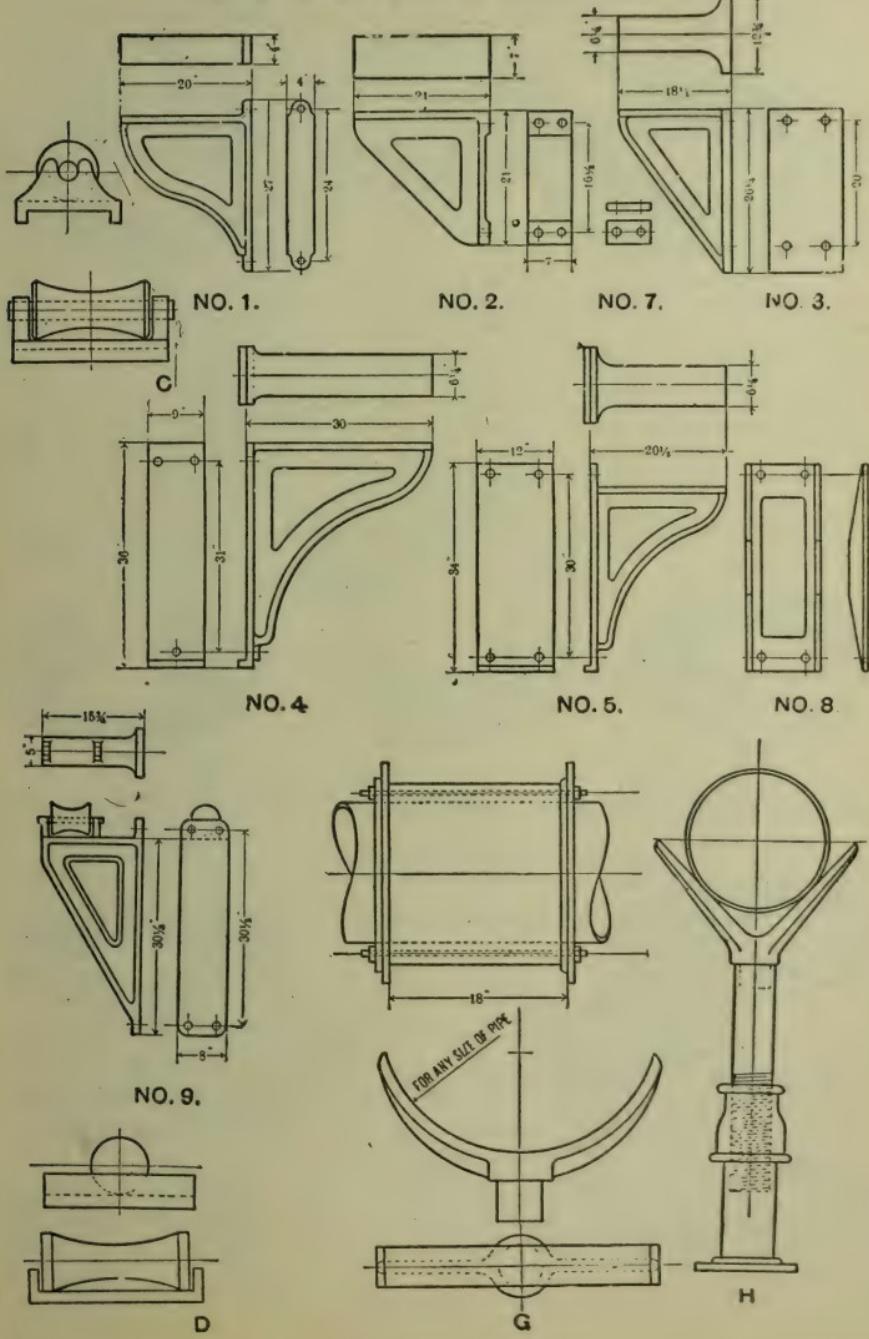
CAST-IRON EXPANSION PLATES

| No. of Hooks | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-------------------------------|-----|-----|-----|------|------|------|------|------|------|------|------|------|
| $\frac{3}{4}$ -in. Pipe, each | .12 | .23 | .34 | .45 | .55 | .60 | .77 | .90 | 1.05 | 1.25 | 1.45 | 1.65 |
| 1 " " " " | .15 | .25 | .35 | .50 | .60 | .70 | .80 | .95 | 1.10 | 1.35 | 1.55 | 1.70 |
| $1\frac{1}{4}$ " " " " | .17 | .27 | .40 | .60 | .70 | .80 | .90 | 1.15 | 1.30 | 1.50 | 1.70 | 2.00 |
| $1\frac{1}{2}$ " " " " | .25 | .40 | .60 | .75 | .90 | 1.00 | 1.25 | 1.50 | 1.75 | 2.00 | 2.25 | 2.50 |
| 2 " " " " | .40 | .60 | .85 | 1.00 | 1.35 | 1.55 | 2.00 | 2.45 | 2.75 | 3.10 | 3.60 | 4.25 |

For Center to Center measure see note under Steel Hook Plate, above.

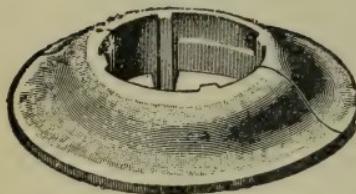
BEAM HOOKS, LONG SHANK B308

| Size..... inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|------------------|---------------|---------------|-----|----------------|----------------|-----|----------------|-----|
| Price.....each | .13 | .15 | .18 | .22 | .24 | .35 | .65 | .90 |

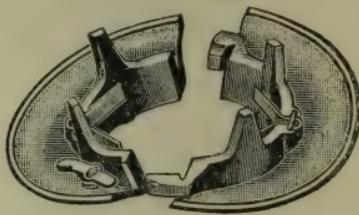
SPECIAL CAST PIPE SUPPORTS, ETC.**PRICES QUOTED ON APPLICATION**

**PERFECTION ADJUSTABLE
FLOOR AND CEILING PLATES**

TOP VIEW



BOTTOM VIEW



B310

PRICE EACH

| Size | inch | $\frac{1}{2}$ - $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ | 5 | 6 | 8 |
|----------------|------|-------------------------------|-----|----------------|----------------|-----|----------------|-----|----------------|------|----------------|------|------|------|
| Nickel-plated. | | .25 | .28 | .32 | .35 | .38 | .52 | .75 | 1.10 | 1.50 | 1.75 | 2.00 | 2.50 | 3.00 |
| Black | | .14 | .18 | .20 | .24 | .28 | .43 | .60 | .90 | 1.25 | 1.40 | 1.60 | 2.00 | 2.50 |

B AND C ADJUSTABLE FLOOR AND CEILING PLATES

FLOOR



B311

Nickel-Plated and Black

CEILING



GRABLER SURE LOCK FLOOR AND CEILING PLATES

TOP VIEW



Nickel-Plated

BOTTOM VIEW



B313

RUSSELL ADJUSTABLE FLOOR AND CEILING PLATES

TOP VIEW



Nickel-Plated

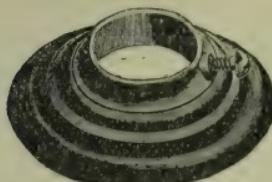
BOTTOM VIEW



Use above list Nickel-Plated.

B314

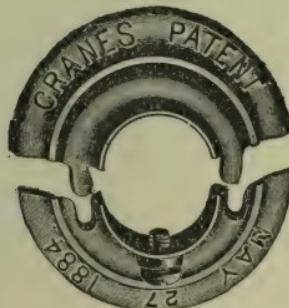
ONE-PIECE
IRON CEILING PLATES
BLACK



B315

| | | | | | | | | | | | | |
|------------|---------------|---------------|-----|----------------|----------------|-----|----------------|-----|----------------|-----|-----|------|
| Inch..... | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | 5 | 6 |
| Each | .11 | .13 | .16 | .18 | .23 | .27 | .36 | .50 | .55 | .68 | .95 | 1.25 |

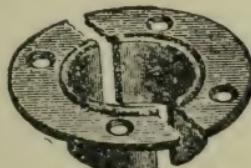
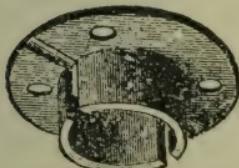
CRANE'S
PATENT CEILING PLATES
BLACK



B316

| | | | | | | | | | | | |
|------------|---------------|-----|----------------|----------------|-----|----------------|-----|----------------|------|------|------|
| Inch..... | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | 5 | 6 |
| Each | .22 | .28 | .32 | .40 | .50 | .65 | .90 | 1.00 | 1.20 | 2.00 | 2.50 |

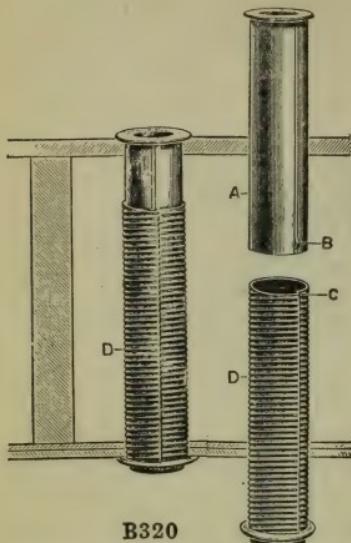
CRANE'S FLOOR PLATES
BLACK



B317

| | | | | | | | | | | | | | |
|------------|---------------|---------------|-----|----------------|----------------|-----|----------------|-----|----------------|-----|-----|-----|------|
| Inch..... | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | 5 | 6 | 8 |
| Each | .06 | .06 | .08 | .11 | .14 | .16 | .24 | .30 | .35 | .42 | .60 | .75 | 1.75 |

This Floor Plate is made with grooves on the under side of the flange, as shown in cut. In order that it may be easily parted by a slight blow when required to be used in halves.



THE ACME FLOOR SLEEVE

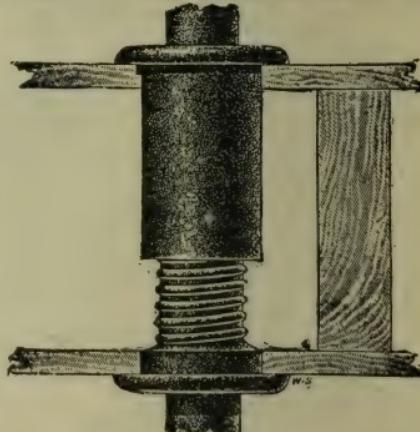
For Steam and Water Pipes
Made of Galvanized Iron

"B" slides in slot "C" to proper adjustment, and sleeve is tightened and locked in position by a half turn to the right.

ADJUSTABLE FROM 10 TO 18 INCHES

| | | | | | | | | | | |
|-------------------------|------|------|------|------|------|------|------|------|------|------|
| Size of Pipe.....inches | 1 | 1¼ | 1½ | 2 | 2½ | 3 | 3½ | 4 | 5 | 6 |
| Price Each | 1.20 | 1.35 | 1.50 | 1.80 | 2.10 | 2.50 | 3.00 | 3.75 | 4.50 | 5.25 |

VOSBURG ADJUSTABLE CAST-IRON FLOOR THIMBLES



| Size ....inches | ¾ | 1 | 1¼ | 1½ | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 |
|-----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| No. 1, Black... | .50 | .60 | .80 | 1.00 | 1.20 | 1.40 | 1.65 | 2.00 | 2.75 | 4.25 | 4.75 | 6.00 |
| No. 1, N. P.... | .90 | 1.00 | 1.30 | 1.60 | 1.90 | 2.20 | 2.75 | 3.20 | 4.15 | 5.75 | 6.35 | 7.80 |
| No. 2, Black... | .60 | .70 | .90 | 1.10 | 1.30 | 1.55 | 1.80 | 2.15 | 3.00 | 4.50 | 5.00 | 6.50 |
| No. 2, N. P.... | 1.00 | 1.10 | 1.40 | 1.70 | 2.00 | 2.35 | 2.90 | 3.35 | 4.40 | 6.00 | 6.60 | 8.30 |

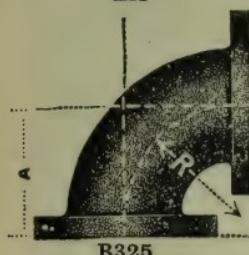
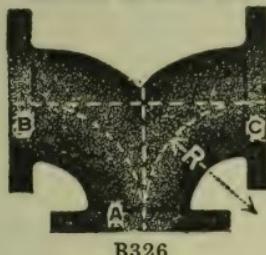
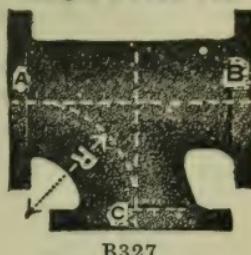
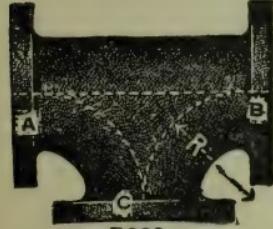
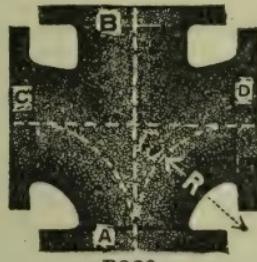
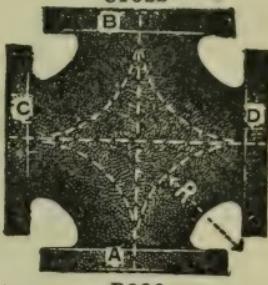
No. 1, minimum length, 9 inches; maximum length, 16 inches.

No. 2, minimum length, 15 inches; maximum length, 22 inches.

No. 1 will always be shipped unless otherwise ordered.

Nickel plated thimbles have only the exposed parts or flange nickel plated.

LONG TURN FLANGED CAST-IRON FITTINGS FOR 150 POUNDS WORKING PRESSURE

Ell**Double Branch Ell****Single Sweep Tee****Straight Back Tee****Cross****Cross**

*If fitting is required to be any certain dimension, face to face or center to face, please so state when inquiring or ordering.

Diameter of Flanges and Template for Drilling, same as Companion Flanges, B345.

These fittings are reduced by use of reducing companion flanges. See B348.

Read reducing fittings in order indicated by A, B, C, D.

| | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Ell { Faced | 5.25 | 5.50 | 6.50 | 7.50 | 8.00 | 10.00 | 11.00 | 13.25 |
| | 6.25 | 6.75 | 7.75 | 8.75 | 10.00 | 12.00 | 13.00 | 15.50 |
| Double Br. Ells { Faced .. | 8.00 | 8.25 | 9.50 | 11.00 | 12.00 | 15.00 | 16.25 | 20.00 |
| | 9.50 | 10.00 | 11.25 | 12.75 | 15.00 | 18.00 | 19.25 | 23.00 |
| Cross { Faced..... | 11.00 | 12.50 | 15.00 | 17.50 | 20.00 | 24.00 | 27.00 | 35.00 |
| | 13.00 | 15.00 | 17.50 | 20.00 | 24.00 | 28.00 | 31.00 | 39.00 |

***Regular Dimensions**

| | | | | | | | | |
|-------------------------|---|----|---|----|----|----|----|----|
| Measurement A....inches | 4 | 4½ | 5 | 5½ | 6½ | 6¾ | 7½ | 8¾ |
| " B..... " | 4 | 4½ | 5 | 5½ | 6 | 6 | 6 | 7¼ |

| | 7 | 8 | 9 | 10 | 12 | 14 | 16 | ..... |
|-------------------------|-------|-------|-------|-------|--------|--------|--------|-------|
| Ell { Faced | 17.50 | 22.00 | 29.00 | 36.00 | 49.00 | 64.00 | 94.00 | ..... |
| | 21.00 | 26.00 | 33.00 | 40.00 | 55.00 | 71.00 | 103.00 | ..... |
| Double Ells { Faced ... | 26.50 | 33.50 | 43.50 | 53.50 | 74.00 | 96.00 | 140.00 | ..... |
| | 32.00 | 39.00 | 50.00 | 60.00 | 83.00 | 107.00 | 153.00 | ..... |
| Cross { Faced..... | 45.00 | 56.00 | 70.00 | 84.00 | 115.00 | 150.00 | 220.00 | ..... |
| | 52.00 | 64.00 | 78.00 | 92.00 | 127.00 | 164.00 | 237.00 | ..... |

***Regular Dimensions**

| | | | | | | | | |
|-------------------------|----|-----|-----|-----|----|-----|-----|-------|
| Measurement A....inches | 9½ | 11½ | 12½ | 13½ | 15 | 16½ | 18½ | ..... |
| " B..... " | 6½ | 7½ | 8½ | 8½ | 9¾ | 10½ | 13½ | ..... |

STANDARD FLANGED CAST-IRON FITTINGS

Intended for working pressure up to 125 pounds per square inch, (the Pittsburg make is rated up to 200 pounds pressure). Other conditions such as weight of piping which they are to support, strain due to settling, water, hammer, etc., must be taken into consideration when determining the limit of safety for fittings.



B331

STANDARD ELBOW—Flanged

For Dimensions see B355 and 356. Diam.
Flanges and drilling Template, see B345.

| Pipe Size ....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 |
|----------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| Elanges, Faced only | 4.75 | 5.00 | 5.75 | 6.50 | 7.25 | 9.00 | 9.75 | 12.00 | 16.00 | 20.00 |
| " " and D. | 5.75 | 6.25 | 7.00 | 7.75 | 9.25 | 11.00 | 11.75 | 14.00 | 19.75 | 23.75 |
| Pipe Size ....inches | 9 | 10 | 12 | 14 | 15 | 16 | 18 | 20 | 22 | 24 |
| Flanges, Faced only | 26.00 | 32.00 | 44.00 | 58.00 | 72.00 | 84.00 | 108.00 | 135.00 | 160.00 | 200.00 |
| " " and D. | 30.00 | 36.00 | 50.00 | 65.00 | 80.00 | 93.00 | 118.00 | 148.00 | 180.00 | 220.00 |



B332

STANDARD 45° ELBOW—Flanged

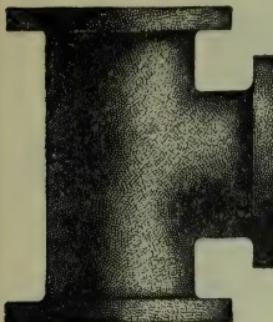
For Dimensions see B355 and 356. Diam.
Flanges and drilling Template, see B345.

| Pipe Size ....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 |
|----------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| Flanges, Faced only | 5.25 | 5.50 | 6.25 | 7.25 | 8.00 | 10.00 | 10.75 | 13.00 | 16.00 | 20.00 |
| " " and D. | 6.25 | 6.75 | 7.50 | 8.50 | 10.00 | 12.00 | 12.75 | 15.00 | 19.75 | 23.75 |
| Pipe Size ....inches | 9 | 10 | 12 | 14 | 15 | 16 | 18 | 20 | 22 | 24 |
| Flanges, Faced only | 26.00 | 32.00 | 44.00 | 58.00 | 72.00 | 84.00 | 108.00 | 135.00 | 160.00 | 200.00 |
| " " and D. | 30.00 | 36.00 | 50.00 | 65.00 | 80.00 | 93.00 | 118.00 | 148.00 | 180.00 | 220.00 |

LOW PRESSURE FLANGED FITTINGS

Intended for 50 pounds Working Pressure

Sizes 12-inch to 36-inch—Using Standard list, quoted on application.

STANDARD FLANGED CAST-IRON FITTINGS

B333

For 125 Pounds Working Pressure

STANDARD TEE - FlangedDimensions, B355 and 356. Diam. Flanges
and drilling Template, B345.

| Pipe size.....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 |
|-------------------------|--------|--------|--------|--------|--------|-------|-------|
| Flanges Faced only..... | 7.00 | 7.25 | 8.25 | 9.50 | 10.50 | 13.00 | 14.25 |
| " " and Drilled.. | 8.50 | 9.00 | 10.00 | 11.25 | 13.50 | 16.00 | 17.25 |
| Pipe Size.....inches | 6 | 7 | 8 | 9 | 10 | 12 | 14 |
| Flanges faced only..... | 17.50 | 23.00 | 29.00 | 38.00 | 46.50 | 64.00 | 84.00 |
| " " and drilled.. | 20.50 | 28.75 | 34.75 | 44.00 | 52.50 | 73.00 | 95.00 |
| Pipe Size.....inches | 16 | 18 | 20 | 22 | 24 | ..... | ..... |
| Flanges Faced only..... | 122.00 | 155.00 | 195.00 | 230.00 | 290.00 | ..... | ..... |
| " " and Drilled.. | 135.00 | 170.00 | 215.00 | 260.00 | 320.00 | ..... | ..... |



B334

STANDARD REDUCING TEE

Flanged

Reducing in Run or Branch.

For Dimensions, see B355 and 356. Diam. Flanges
and drilling Template, B345.

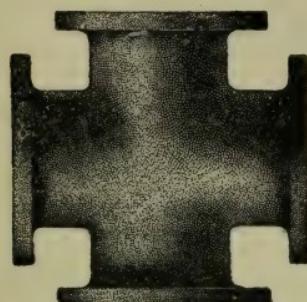
| Pipe Size.....inches | 2½ | 3 | 3½ | 4 | 4½ | 5 |
|-------------------------|--------|--------|--------|--------|--------|--------|
| Flanges Faced only..... | 8.25 | 9.50 | 11.00 | 12.00 | 15.00 | 16.25 |
| " " and Drilled.. | 10.00 | 11.25 | 12.75 | 15.00 | 18.00 | 19.25 |
| Pipe Size.....inches | 6 | 7 | 8 | 9 | 10 | 12 |
| Flanges Faced only..... | 20.00 | 26.50 | 33.50 | 43.50 | 53.50 | 74.00 |
| " " and Drilled.. | 23.00 | 32.00 | 39.00 | 50.00 | 60.00 | 83.00 |
| Pipe Size.....inches | 14 | 16 | 18 | 20 | 22 | 24 |
| Flanges Faced only..... | 96.00 | 140.00 | 178.00 | 225.00 | 265.00 | 335.00 |
| " " and Drilled.. | 107.00 | 153.00 | 193.00 | 245.00 | 295.00 | 365.00 |

Low Pressure Fittings for 50 pounds pressure, 12-inch to 36-inch, quoted on application.

STANDARD FLANGED CAST-IRON FITTINGS

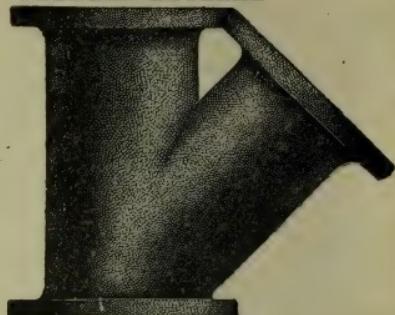
For 125 Pounds Working Pressure

FLANGED CROSS



B335

FLANGED LATERAL



B336

For Dimensions, see B355 and 356. Diam. Flanges and drilling Template, B345.

CROSS AND LATERAL

| Pipe Size....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Flanges Faced only... each | 9.50 | 10.00 | 11.50 | 13.00 | 14.50 | 18.00 | 19.50 | 24.00 |
| " " and D... " | 11.50 | 12.50 | 14.00 | 15.50 | 18.50 | 22.00 | 23.50 | 28.00 |

| Pipe Size ....inches | 7 | 8 | 9 | 10 | 12 | 14 | 16 | ..... |
|----------------------------|-------|-------|-------|-------|--------|--------|--------|-------|
| Flanges Faced only... each | 32.00 | 40.00 | 52.00 | 64.00 | 88.00 | 116.00 | 168.00 | ..... |
| " " and D. " | 39.50 | 47.50 | 60.00 | 72.00 | 100.00 | 130.00 | 186.00 | ..... |

STANDARD REDUCING CROSS AND LATERAL

| Pipe Size ....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Flanges Faced only... each | | 11.50 | 13.25 | 15.00 | 16.75 | 20.75 | 22.50 | 27.50 |
| " " and D... " | | 14.00 | 15.75 | 17.50 | 20.75 | 25.00 | 26.50 | 31.50 |

| Pipe Size....inches | 7 | 8 | 9 | 10 | 12 | 14 | 16 | ..... |
|----------------------------|-------|-------|-------|-------|--------|--------|--------|-------|
| Flanges Faced only... each | 37.00 | 46.00 | 60.00 | 74.00 | 100.00 | 132.00 | 193.00 | ..... |
| " " and D... " | 45.00 | 53.50 | 68.00 | 82.00 | 112.00 | 146.00 | 210.00 | ..... |

BASE ELBOW AND TEE

B337 and B338

MADE TO ORDER.

PRICE LIST BELOW.

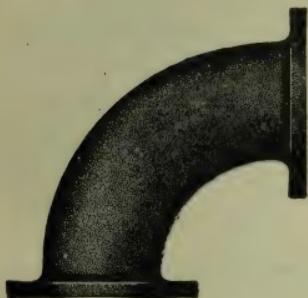
| Pipe Size.....inches | 4 | 4½ | 5 | 6 | 7 |
|----------------------|-------|-------|-------|-------|-------|
| Ell Faced only..... | 12.00 | 15.00 | 16.25 | 20.00 | 26.50 |
| " " and Drilled..... | 15.00 | 18.00 | 19.25 | 23.00 | 32.00 |

| Pipe Size.....inches | 8 | 10 | 12 | 14 | 16 |
|----------------------|-------|-------|-------|--------|--------|
| Ell Faced only..... | 33.50 | 53.50 | 74.00 | 96.00 | 140.00 |
| " " and Drilled..... | 39.00 | 60.00 | 83.00 | 170.00 | 153.00 |

Tee quoted on application. Low Pressure Fittings for 50 pounds pressure, 2-inch to 36-inch, quoted on application.

STANDARD FLANGED CAST-IRON FITTINGS

For 125 Pounds Working Pressure
Special Pattern



B340

**FLANGED
SPECIAL LONG RADIUS ELL**

See Template for drilling, B345.
Diameter of Flanges, same as B345.

| Pipe Size | Inches | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 14 | 16 |
|----------------------------|--------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| Flanges faced only | | 14.50 | 19.50 | 24.00 | 32.00 | 40.00 | 64.00 | 110.00 | 160.00 | 200.00 |
| " " and drilled | | 18.50 | 23.50 | 28.00 | 39.50 | 47.50 | 72.00 | 120.00 | 175.00 | 220.00 |
| Radius { Crane Fitting In. | | 12 | 14 | 14 | 16 | 14½ | 17 | 22½ | 32 | 32 |
| Center to face | | 13¾ | 14½ | 14½ | 17½ | 15½ | 18 | 24 | 33 | 33 |

Also made to order of different dimensions at special price.

**FLANGED TAPER
REDUCING ELL**



B341

**FLANGED TAPER
REDUCER**



B342

Prices on application.

See Template for drilling, B345. Diameter of Flanges, same as B345.

| Pipe Size | Inches | 3½ | 4 | 5 | 6 | 7 |
|---------------------------------------|--------|-------|--------|--------|--------|--------|
| Elbow { Flanges, faced only | | 13.00 | 14.50 | 19.50 | 24.00 | 32.00 |
| " " and drilled | | 15.50 | 18.50 | 23.50 | 28.00 | 39.50 |
| Center to Face, Crane Fitting, Inches | | 6 | 6½ | 7½ | 8 | 8½ |
| Reduced to | Inches | 3-2½ | 3-2½-2 | 4-3-2½ | 5-4-3 | 6-5 |
| Pipe Size | Inches | 8 | 10 | 12 | 14 | 16 |
| Elbow { Flanges, faced only | | 40.00 | 64.00 | 88.00 | 116.00 | 168.00 |
| " " and drilled | | 47.50 | 72.00 | 100.00 | 130.00 | 186.00 |
| Center to Face, Crane Fitting, Inches | | 9 | 11 | 12 | 14 | 15 |
| Reduced to | Inches | 6-5-4 | 8-6-5 | 10-8 | 12-10 | 15-12 |

Other sizes quoted on application.

Low Pressure Fittings for 50 pounds pressure, 12 inch to 36-inch, quoted on application.

STANDARD COMPANION FLANGES



B345

For Standard Valves and Fittings

For 150 lbs. Working Pressure.

BLIND FLANGES
16 in. and Less
Diameter

B346

BLIND FLANGES
19 in. and Larger
Diameter

B347

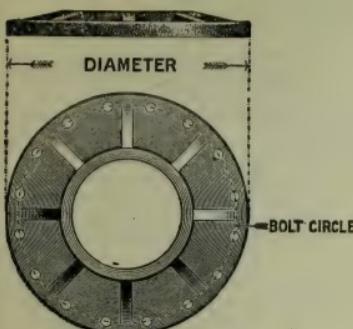
| Size Inches | FACED FLANGES | | FACED BLIND FLANGES | | DRILLING | | |
|-----------------------------------|------------------------|--|------------------------|--|--------------------------|--------------|------------------------------------|
| | Faced Price Each | Faced and Drilled Price Each | Faced Price Each | Faced and Drilled Price Each | Bolt Circle Inches | No. Bolts | Size Bolts |
| 2 x 6 | 1.20 | 1.50 | 1.40 | 1.70 | 4 $\frac{3}{4}$ | 4 | $\frac{5}{8} \times 2$ |
| 2 $\frac{1}{2}$ x 7 | 1.40 | 2.00 | 1.60 | 2.20 | 5 $\frac{1}{2}$ | 4 | $\frac{5}{8} \times 2 \frac{1}{4}$ |
| 3 x 7 $\frac{1}{2}$ | 1.60 | 2.25 | 1.85 | 2.50 | 6 | 4 | $\frac{5}{8} \times 2 \frac{1}{2}$ |
| 3 $\frac{1}{2}$ x 8 $\frac{1}{2}$ | 1.80 | 2.50 | 2.10 | 2.80 | 7 | 4 | $\frac{5}{8} \times 2 \frac{1}{2}$ |
| 4 x 9 | 2.15 | 3.00 | 2.50 | 3.35 | 7 $\frac{1}{2}$ | 4 | $\frac{3}{4} \times 2 \frac{3}{4}$ |
| 4 $\frac{1}{2}$ x 9 $\frac{1}{4}$ | 2.50 | 3.35 | 2.90 | 3.75 | 7 $\frac{3}{4}$ | 8 | $\frac{3}{4} \times 3$ |
| 5 x 10 | 2.80 | 3.65 | 3.25 | 4.10 | 8 $\frac{1}{2}$ | 8 | $\frac{3}{4} \times 3$ |
| 6 x 11 | 3.20 | 4.00 | 3.70 | 4.50 | 9 $\frac{1}{2}$ | 8 | $\frac{3}{4} \times 3$ |
| 7 x 12 $\frac{1}{2}$ | 4.35 | 5.75 | 5.00 | 6.40 | 10 $\frac{3}{4}$ | 8 | $\frac{3}{4} \times 3 \frac{1}{4}$ |
| 8 x 13 $\frac{1}{2}$ | 5.00 | 6.50 | 5.75 | 7.25 | 11 $\frac{3}{4}$ | 8 | $\frac{3}{4} \times 3 \frac{1}{2}$ |
| 9 x 15 | 6.75 | 8.25 | 7.75 | 9.25 | 13 $\frac{1}{4}$ | 12 | $\frac{3}{4} \times 3 \frac{1}{2}$ |
| 10 x 16 | 7.75 | 9.25 | 9.00 | 10.60 | 14 $\frac{1}{4}$ | 12 | $\frac{7}{8} \times 3 \frac{3}{4}$ |
| 12 x 19 | 10.50 | 12.50 | 14.00 | 16.00 | 17 | 12 | $\frac{7}{8} \times 3 \frac{3}{4}$ |
| 14 x 21 | 13.75 | 16.00 | 17.50 | 19.75 | 18 $\frac{3}{4}$ | 12 | 1 x 4 $\frac{1}{4}$ |
| 15 x 21 | 18.00 | 21.00 | 22.50 | 25.50 | ... | .. | ... |
| 15 x 22 $\frac{1}{4}$ | 18.00 | 21.00 | 22.50 | 25.50 | 20 | 16 | 1 x 4 $\frac{1}{4}$ |
| 16 x 23 $\frac{1}{2}$ | 22.50 | 26.00 | 28.00 | 31.50 | 21 $\frac{1}{4}$ | 16 | 1 x 4 $\frac{1}{4}$ |
| 18 x 25 | 27.50 | 31.00 | 33.00 | 36.50 | 22 $\frac{3}{4}$ | 16 | 1 $\frac{1}{8}$ x 4 $\frac{3}{4}$ |
| 20 x 27 $\frac{1}{2}$ | 30.00 | 34.00 | 36.00 | 40.00 | 25 | 20 | 1 $\frac{1}{8}$ x 5 |
| 22 x 29 $\frac{1}{2}$ | ..... | ..... | 41.00 | 46.00 | 27 $\frac{1}{4}$ | 20 | 1 $\frac{1}{4}$ x 5 $\frac{1}{2}$ |
| 24 x 32 | ..... | ..... | 50.00 | 55.00 | 29 $\frac{1}{2}$ | 20 | 1 $\frac{1}{4}$ x 5 $\frac{1}{2}$ |
| 26 x 34 $\frac{1}{4}$ | ..... | ..... | ..... | ..... | 31 $\frac{3}{4}$ | 24 | 1 $\frac{1}{4}$ x 5 $\frac{3}{4}$ |
| 28 x 36 $\frac{1}{2}$ | ..... | ..... | ..... | ..... | 34 | 28 | 1 $\frac{1}{4}$ x 6 |
| 30 x 38 $\frac{3}{4}$ | ..... | ..... | ..... | ..... | 36 | 28 | 1 $\frac{3}{8}$ x 6 $\frac{1}{4}$ |
| 36 x 45 $\frac{3}{4}$ | ..... | ..... | ..... | ..... | 42 $\frac{3}{4}$ | 32 | 1 $\frac{3}{8}$ x 6 $\frac{1}{2}$ |

NOTE—Flanges and Flanged Fittings are drilled in multiples of four, so that fittings may be made to face in any quarter, and holes straddle center line. Can be drilled special.

Low Pressure Flanges for 50 pounds pressure, special.

STANDARD REDUCING COMPANION FLANGES

**WITH RIBS. THE STANDARD VALVES AND
FLANGED FITTINGS FOR 150 POUNDS
WORKING PRESSURE**



B348

Drilling Template is same as for corresponding flange diameters, B345.

| Size Inches | PRICE | | Size Inches | PRICE | | Size Inches | PRICE | |
|----------------|---------------|---------------------------------|----------------|---------------|---------------------------------|----------------|---------------|---------------------------------|
| | Faced Each | Faced and Drilled Each | | Faced Each | Faced and Drilled Each | | Faced Each | Faced and Drilled Each |
| 2 x 7 | 2.10 | 3.00 | 5 x 12½ | 6.50 | 8.50 | 14 x 22¼ | 27.00 | 31.50 |
| 2 x 7½ | 2.40 | 3.35 | 6 x 12½ | 6.50 | 8.50 | 10 x 23½ | 34.00 | 39.00 |
| 2½ x 7½ | 2.40 | 3.35 | 5 x 13½ | 7.50 | 9.75 | 12 x 23½ | 34.00 | 39.00 |
| 2 x 8½ | 2.70 | 3.75 | 6 x 13½ | 7.50 | 9.75 | 14 x 23½ | 34.00 | 39.00 |
| 2½ x 8½ | 2.70 | 3.75 | 7 x 13½ | 7.50 | 9.75 | 15 x 23½ | 34.00 | 39.00 |
| 3 x 8½ | 2.70 | 3.75 | 6 x 15 | 10.00 | 12.25 | 12 x 25 | 41.00 | 46.00 |
| 2½ x 9 | 3.25 | 4.50 | 7 x 15 | 10.00 | 12.25 | 14 x 25 | 41.00 | 46.00 |
| 3 x 9 | 3.25 | 4.50 | 8 x 15 | 10.00 | 12.25 | 15 x 25 | 41.00 | 46.00 |
| 3½ x 9 | 3.25 | 4.50 | 7 x 16 | 11.50 | 14.00 | 16 x 25 | 41.00 | 46.00 |
| 3 x 9½ | 3.75 | 5.00 | 8 x 16 | 11.50 | 14.00 | 14 x 27½ | 45.00 | 51.00 |
| 3½ x 9½ | 3.75 | 5.00 | 9 x 16 | 11.50 | 14.00 | 15 x 27½ | 45.00 | 51.00 |
| 4 x 9½ | 3.75 | 5.00 | 8 x 19 | 15.75 | 18.75 | 16 x 27½ | 45.00 | 51.00 |
| 3½ x 10 | 4.25 | 5.50 | 9 x 19 | 15.75 | 18.75 | 18 x 27½ | 45.00 | 51.00 |
| 4 x 10 | 4.25 | 5.50 | 10 x 19 | 15.75 | 18.75 | 16 x 29½ | 50.00 | 58.50 |
| 4½ x 10 | 4.25 | 5.50 | 9 x 21 | 20.00 | 24.00 | 18 x 29½ | 50.00 | 58.50 |
| 4 x 11 | 4.75 | 6.00 | 10 x 21 | 20.00 | 24.00 | 20 x 29½ | 50.00 | 58.50 |
| 4½ x 11 | 4.75 | 6.00 | 12 x 21 | 20.00 | 24.00 | 18 x 32 | 61.00 | 70.00 |
| 5 x 11 | 4.75 | 6.00 | 10 x 22¼ | 27.00 | 31.50 | 20 x 32 | 61.00 | 70.00 |
| 4½ x 12½ | 6.50 | 8.50 | 12 x 22¼ | 27.00 | 31.50 | ..... | ..... | ..... |

REDUCING FLANGED FITTINGS

It is not possible to carry in stock a line of Reducing Flanged Fittings sufficiently large to meet all demands promptly. We aim to carry a complete line of straight sizes and a moderate line of Reducing Tees, but we do not attempt to cover all possible sizes.

To avoid delay, we carry in stock a line of Reducing Flanges as illustrated above. These flanges, used in connection with straight or reducing fittings carried in stock, enable us to fill orders for reduced sizes very promptly.

Customers Who Desire Fittings Reduced in this Manner Will Please Specify "Reduced by Flanges if Necessary."

Reducing flanges are made as per table above.

These flanges will always be the same thickness as the regular companion flanges of corresponding outside diameter and are always drilled to the template corresponding to the outside diameter unless otherwise ordered, except on special order.

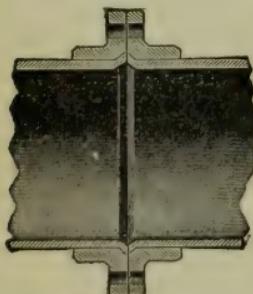
PRICES FOR DRILLING FLANGED VALVES

STANDARD AND LOW
PRESSURE VALVES

B349

EXTRA HEAVY AND
MEDIUM VALVES

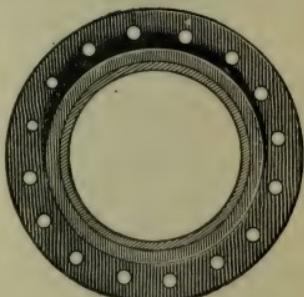
| Size Inches | Price Drilling Valves With 2 Flanges Except Angle Valves Each | Price Drilling Angle Valves Each | Price Drilling Cross Valves And Cross Safety Valves Each | Price Drilling Valves With 2 Flanges Except Angle Valves Each | Price Drilling Angle Valves Each | Price Drilling Cross Valves Each |
|-----------------|---|----------------------------------|--|---|----------------------------------|----------------------------------|
| 2 | .75 | 1.25 | 1.50 | .75 | 1.25 | 1.50 |
| 2 $\frac{1}{2}$ | .75 | 1.25 | 1.50 | .75 | 1.25 | 1.50 |
| 3 | .75 | 1.25 | 1.50 | .75 | 1.25 | 1.50 |
| 3 $\frac{1}{2}$ | 1.00 | 1.50 | 2.00 | 1.00 | 1.50 | 2.00 |
| 4 | 1.25 | 1.75 | 2.50 | 1.25 | 1.75 | 2.50 |
| 4 $\frac{1}{2}$ | 1.50 | 2.00 | 3.00 | 1.50 | 2.00 | 3.00 |
| 5 | 1.50 | 2.00 | 3.00 | 1.50 | 2.00 | 3.00 |
| 6 | 1.75 | 2.50 | 3.50 | 1.75 | 2.50 | 3.50 |
| 7 | 2.25 | 3.00 | 4.50 | 2.25 | 3.00 | 4.50 |
| 8 | 2.25 | 3.00 | 4.50 | 2.25 | 3.00 | 4.50 |
| 9 | 2.50 | 3.50 | 5.00 | 2.50 | 3.50 | 5.00 |
| 10 | 2.50 | 3.50 | 5.00 | 2.50 | 3.50 | 5.00 |
| 12 | 3.50 | 5.00 | 7.00 | 3.50 | 5.00 | 7.00 |
| 14 | 4.00 | 6.00 | .... | 4.00 | 6.00 | 8.00 |
| 15 | 4.50 | 6.50 | .... | 4.00 | 6.00 | 8.00 |
| 16 | 5.00 | 7.00 | .... | 5.00 | 7.00 | .... |
| 18 | 6.00 | .... | .... | 6.00 | .... | .... |
| 20 | 7.50 | .... | .... | 7.50 | .... | .... |
| 22 | 9.00 | .... | .... | 9.00 | .... | .... |
| 24 | 10.00 | .... | .... | 10.00 | .... | .... |
| 30 | 12.00 | .... | .... | 12.00 | .... | .... |



B350

These cuts illustrate a method we sometimes employ for flanging pipe of 12 inches diameter and larger. The flanges are not threaded, but are bored to fit the pipe with the inside corner of the flange face chamfered off. The end of the pipe is then inserted in the flange and expanded, with the end peened down into the recess in flange. No rivets are used.

Prices on application.



B351

We Cut and Thread Pipe to any dimensions.



B352

FLANGES
Tapped Eccentric

Prices on application.

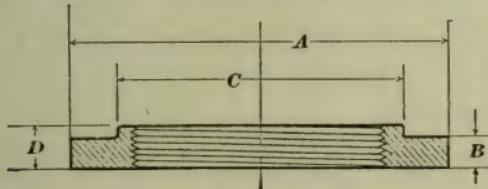
**THE FOLLOWING IS A LIST OF
ORDINARY SIZES OF REDUCING FLANGED TEES**

Can generally be had promptly. Other sizes furnished on short notice.

By using Reducing Companion Flanges, straight sizes of tees can be used, and the desired reduction secured in the flange. When ordering reduced flanged tees, please state whether it will be satisfactory to furnish nearest size in stock, and reducing flanges, to make the size desired.

| | | |
|------------|-------------|--------------|
| 3 x 3 x 2½ | 6 x 5 x 3 | 12 x 12 x 10 |
| 4 x 4 x 3 | 7 x 7 x 6 | 12 x 12 x 8 |
| 4 x 4 x 2½ | 7 x 7 x 5 | 12 x 12 x 7 |
| 4 x 4 x 2 | 7 x 7 x 4 | 12 x 12 x 6 |
| 4 x 3 x 4 | 7 x 6 x 5 | 12 x 12 x 5 |
| 5 x 5 x 4 | 8 x 8 x 6 | 12 x 10 x 12 |
| 5 x 5 x 3 | 8 x 8 x 5 | 12 x 8 x 12 |
| 5 x 5 x 2½ | 8 x 8 x 4 | 12 x 10 x 10 |
| 5 x 4 x 5 | 8 x 6 x 8 | 14 x 14 x 12 |
| 5 x 3 x 3 | 8 x 6 x 6 | 14 x 14 x 10 |
| 6 x 6 x 5 | 6 x 6 x 8 | 14 x 14 x 8 |
| 6 x 6 x 4 | 10 x 10 x 8 | 14 x 14 x 7 |
| 6 x 6 x 3½ | 10 x 10 x 6 | 14 x 14 x 6 |
| 6 x 6 x 3 | 10 x 10 x 5 | 14 x 10 x 10 |
| 6 x 6 x 2½ | 10 x 10 x 4 | 16 x 16 x 12 |
| 6 x 6 x 2 | 10 x 8 x 10 | 16 x 16 x 10 |
| 6 x 5 x 6 | 10 x 6 x 10 | 16 x 16 x 8 |
| 6 x 4 x 6 | 10 x 8 x 8 | 12 x 12 x 16 |
| 6 x 5 x 5 | 8 x 8 x 10 | |

DIMENSIONS OF STANDARD COMPANION FLANGES

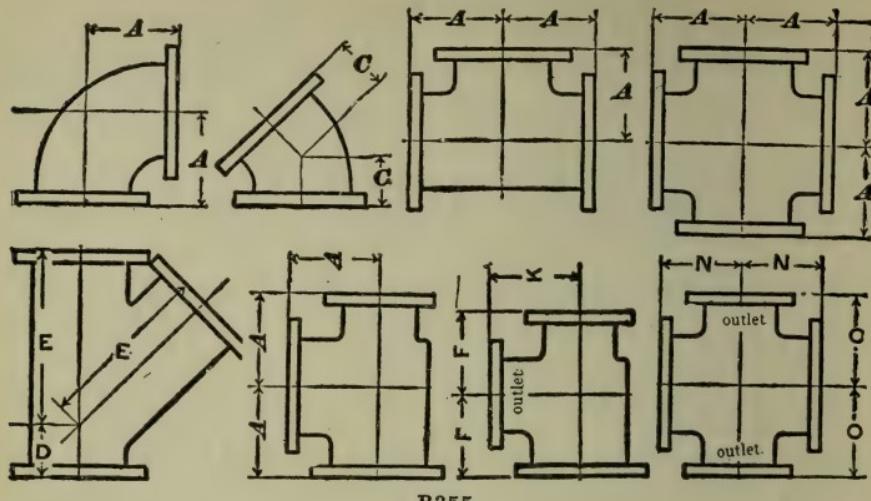


2 in. to 20 in. Screwed.

B353

| Pipe Size.....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 |
|--|-------|--------|-------|--------|--------|--------|-------|--------|--------|-------|
| Diameter of Flange A.....inches | 6 | 7 | 7½ | 8½ | 9 | 9½ | 10 | 11 | 12½ | 13½ |
| Thickness of " B | 5/8 | 11/16 | 3/4 | 13/16 | 11/8 | 15/16 | 15/16 | 1 | 1 1/16 | 1 1/8 |
| Length Thread D....Pittsburg Flange | 15/16 | 1 | 1 1/8 | 1 1/16 | 1 3/8 | 1 1/4 | 1 1/4 | 1 1/8 | 1 1/16 | 1 1/8 |
| " " D....Crane " | 1 | 1 1/16 | 1 1/8 | 1 1/16 | 1 3/8 | 1 1/4 | 1 1/8 | 1 1/16 | 1 1/8 | 1 1/8 |
| Pipe Size.....inches | 9 | 10 | 12 | 14 | 15 | 16 | 18 | 20 | 22 | 24 |
| Diameter of Flange A.....inches | 15 | 16 | 19 | 21 | 22 1/4 | 23 1/4 | 25 | 27 1/2 | 29 1/2 | 32 |
| Thickness of " B | 1 1/8 | 1 3/8 | 1 1/4 | 1 3/8 | 1 3/8 | 1 1/4 | 1 1/8 | 1 1/16 | 1 1/16 | 1 1/8 |
| Length of Thread D....Pittsburg Flange | 1 1/8 | 1 1/16 | 1 1/8 | 1 1/8 | 2 1/8 | 2 1/4 | 2 | 2 5/8 | 2 1/16 | 3 |
| " " D....Crane " | 1 3/4 | 1 7/8 | 2 1/8 | 2 1/8 | 2 1/8 | 2 1/4 | 2 1/8 | 2 3/8 | 2 1/8 | 3 |

For Standard Drilling of Flanges and Fittings, see B345.



B355

DIMENSION

PITTSBURG**STANDARD FLANGED ELLS, TEES AND CROSSES**

Diameter and thickness of Flanges on fittings is same as Companion Flanges, B353.

| Pipe Size of Run.....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 |
|---------------------------------|---|----|----|----|-----|-----|-----|-----|-----|-----|
| *Face to Face, AA or 00 | 2 | 8 | 9 | 9½ | 11 | 11½ | 12 | 12½ | 14 | 15½ |
| Center to Face, AK or 0 | " | 4 | 4½ | 4¾ | 5½ | 5¾ | 6 | 6¼ | 7 | 7¾ |
| Center to Face, 45° Ell-C | " | 2½ | 2¾ | 3 | 3¼ | 3½ | 3¾ | 4 | 4½ | 4¾ |
| Center to Face, Y Short End-D.. | " | 1¾ | 2 | 2¼ | 2½ | 2¾ | 2½ | 2¾ | 3¼ | 3¾ |
| Center to Face, Y Branches E .. | " | 7½ | 8½ | 9½ | 10½ | 11 | 11½ | 12½ | 13½ | 15½ |

| Pipe Size of Run.....inches | 9 | 10 | 12 | 14 | 15 | 16 | 18 | 20 | 22 | 24 |
|---------------------------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| *Face to Face, AA or 00 | 18 | 19½ | 22½ | 25 | 26 | 27½ | 29½ | 32 | 34½ | 37 |
| Center to Face, AK or 0 | " | 9 | 9¾ | 11¼ | 12½ | 13 | 13¾ | 14¾ | 16 | 17½ |
| Center to Face, 45° Ell-C | " | 5 | 5½ | 6½ | 7 | 7½ | 7¾ | 8½ | 8¾ | 9½ |
| Center to Face, Y Short End-D | " | 4½ | 4½ | 5¾ | 5¾ | 6 | 6½ | 6¾ | 7½ | 8 |
| Center to Face, Y Branches E .. | " | 18 | 19½ | 23 | 25½ | 27 | 28½ | 30½ | 33½ | 35½ |

*Reduction in the run of tees and crosses does not change the face to face measurement. For instance, an 8x6x8 tee would take same face to face measurement as an 8x8x8; but tees and crosses having a reduced branch are shorter face to face than straight sizes. See following rule.

"PITTSBURG" TEES AND CROSSES

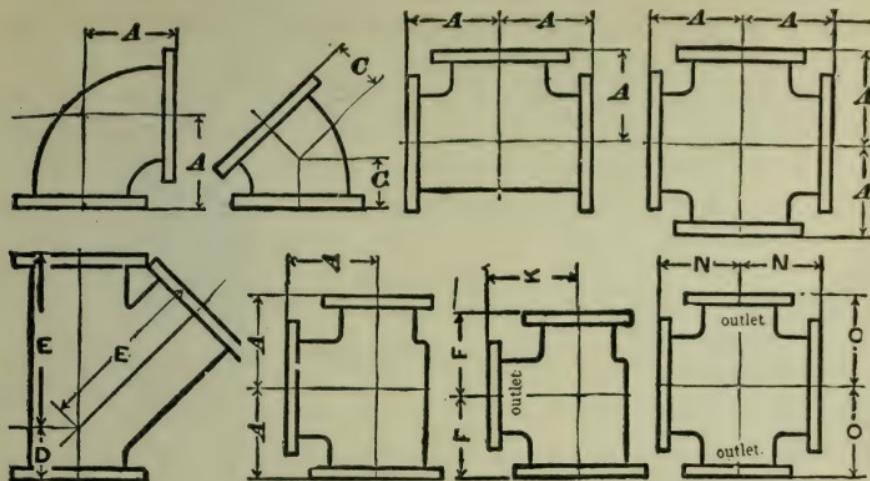
With Outlet Smaller than Largest Opening in the Run

F. F. and N. N. To get face to face measurement, subtract the diameter of the flange on the outlet from diameter of largest flange on run (see diameter Companion Flanges, B345), and subtract this difference from the face to face measurement of straight tee or cross, as shown AA; the remainder will represent the face to face measurement FF of the tee or NN of the cross with the reduced outlet.

Tees Having Outlet Larger than the Run.

Take the same measurement face to face AA and center to face A, as a straight fitting, of same size as the large branch.

Reduced Y's are same measurements D and E as shown in table above.



B356

DIMENSIONS

CRANE'S STANDARD FLANGED FITTINGS

Reducing Tees and crosses (except those shown in Table 3) are same dimensions. Face to face of run and center to face of outlet, as straight fittings, (tables 1 and 2). Face to face dimensions of Flanged Fittings are not changed by reduction on the run. Diameter of Flanges, etc., are same as Companion Flanges, B345.

Reducing Tees and Crosses 2" to 9" inclusive are the same dimensions as straight fittings center to face and face to face.

| Table No. 1 . . . Size of Run, inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 | 9 |
|--|------|----|----|-----|----|-----|-----|-----|-----|-----|-----|
| Face to Face, AA, FF, NN, or OO inch's | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 20 |
| Center to Face, A, K, N, or O.. | " 4½ | 5 | 5½ | 6 | 6½ | 7 | 7½ | 8 | 8½ | 9 | 10 |
| " " " 45° Ell C..... | " 2½ | 3 | 3 | 3½ | 4 | 4 | 4½ | 5 | 5½ | 5½ | 6 |
| " " " Face Y, Short End-D | " 2½ | 2½ | 3 | 3 | 3 | 3 | 3½ | 3½ | 4 | 4½ | 4½ |
| " " " Long Ends-E | " 8 | 9½ | 10 | 11½ | 12 | 12½ | 13½ | 14½ | 16½ | 17½ | 19½ |

| Table No. 2 . . . Size of Run, inches | 10 | 12 | 14 | 15 | 16 |
|---------------------------------------|--------------|--------------|---------------|---------------|---------------|
| Outlets.....inches | 7 to 10-inch | 9 to 12-inch | 10 to 14-inch | 10 to 15-inch | 12 to 16-inch |
| Face to Face AA, FF, or NN.....inches | 22 | 24 | 28 | 29 | 30 |
| Center to Face A, K, N, or O....." | 11 | 12 | 14 | 14½ | 15 |
| " " " 45° Ell C....." | 6½ | 7½ | 7½ | 8 | 8 |
| " " " Face, Y Short End-D | 5 | 5½ | 6 | 6 | 6½ |
| " " " Long Ends-E | 20½ | 24½ | 27 | 28½ | 30 |

Reducing Tees and Crosses not mentioned above.

| Table No. 3 . . . Size of Run, inches | 10 | 12 | 14 | 15 | 16 |
|---------------------------------------|---------------|---------------|---------------|---------------|----------------|
| Outlets.....inches | 6 and smaller | 8 and smaller | 9 and smaller | 9 and smaller | 10 and smaller |
| Face to Face, FF or NN.....inches | 18 | 20 | 22 | 23 | 24 |
| Center to Face, Outlet K.O....." | 9½ | 11 | 13 | 13½ | 14 |

Tees having outlets larger than the run will be the same length center to face of all openings as a Tee with all openings of the size of the outlet.

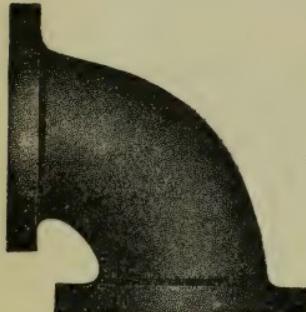
Example: A 12" x 12" x 16" Tee will be governed by the dimensions of the 16-inch Tee, namely, 15 inches center to face of all openings, and 30 inches face to face.

Reducing Y's being made to order, we are unable to give dimensions.

EXTRA HEAVY FLANGED CAST-IRON FITTINGS

Intended for 250 pounds working pressure, but have been successfully used on even higher pressure, so that the margin of Safety is very wide

They can be furnished, tongued and grooved flanges, or with male and female flanges, at special prices. See B425.



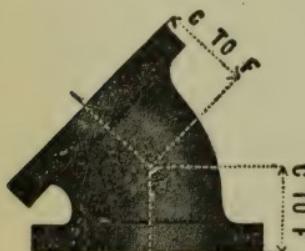
B401

EXTRA HEAVY FLANGED ELBOW

See Diam. Flanges and drilling Template, B416.
Dimensions, B430 and 431.

| Size Pipe...inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 | 9 |
|---------------------------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Flanges, Faced only | 7.00 | 7.75 | 8.75 | 9.75 | 10.75 | 13.50 | 15.00 | 18.00 | 24.00 | 30.00 | 39.00 |
| Flanges, Faced and Dr'l'd | 8.50 | 9.25 | 10.50 | 11.50 | 13.50 | 16.50 | 17.75 | 21.00 | 28.00 | 35.00 | 45.00 |

| Size Pipe..inches | 10 | 12 | 14 | 15 | 16 | 18 | 20 | 22 | 24 |
|---------------------------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| Flanges, Faced only | 48.00 | 66.00 | 87.00 | 108.00 | 125.00 | 160.00 | 200.00 | 240.00 | 300.00 |
| Flanges, Faced and Dr'l'd | 54.00 | 75.00 | 97.00 | 120.00 | 140.00 | 175.00 | 220.00 | 270.00 | 330.00 |



B402

EXTRA HEAVY 45 DEGREE ELBOW

Flanged

See Diam. Flanges and drilling Template, B 416.
Dimensions, B430 and 431.

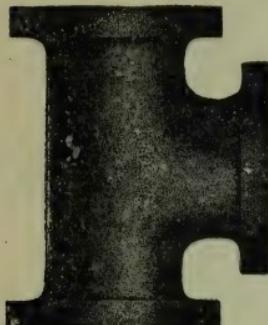
| Size Pipe, inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 | 9 |
|---------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Flanges, Faced only ... | 7.75 | 8.50 | 9.50 | 10.75 | 12.00 | 15.00 | 16.50 | 19.50 | 24.00 | 30.00 | 39.00 |
| Flanges, F'c'd and Dr'l'd | 9.00 | 10.00 | 11.00 | 12.50 | 15.00 | 18.00 | 19.50 | 22.50 | 28.00 | 35.00 | 45.00 |

| Size Pipe...inches | 10 | 12 | 14 | 15 | 16 | 18 | 20 | 22 | 24 |
|---------------------------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| Flanges, Faced only | 48.00 | 66.00 | 87.00 | 108.00 | 125.00 | 160.00 | 200.00 | 240.00 | 300.00 |
| Flanges, Faced and Dr'l'd | 54.00 | 75.00 | 97.00 | 120.00 | 140.00 | 175.00 | 220.00 | 270.00 | 330.00 |

Crane's Ferrosteel or Malleable Extra Heavy Fittings quoted on application.

EXTRA HEAVY FLANGED CAST-IRON FITTINGS

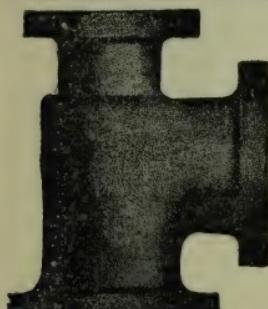
For 250 Pounds Working Pressure

**B403****EXTRA HEAVY FLANGED TEE**

See Diam. Flanges and drilling Template B416.

Dimensions, B430 and 431.

| Pipe size.....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 |
|------------------------------|--------|--------|--------|--------|--------|--------|--------|
| Flanges faced only..... | 10.50 | 11.50 | 12.50 | 14.50 | 16.00 | 19.50 | 21.00 |
| Flanges faced and drilled... | 12.50 | 13.50 | 15.00 | 17.00 | 20.00 | 24.00 | 26.00 |
| Pipe size.....inches | 6 | 7 | 8 | 9 | 10 | 12 | 14 |
| Flanges faced only..... | 26.00 | 34.00 | 43.00 | 57.00 | 70.00 | 96.00 | 125.00 |
| Flanges faced and drilled... | 31.00 | 42.00 | 51.00 | 66.00 | 78.00 | 110.00 | 140.00 |
| Pipe size.....inches | 15 | 16 | 18 | 20 | 22 | 24 | |
| Flanges faced only..... | 157.00 | 185.00 | 230.00 | 290.00 | 345.00 | 435.00 | ..... |
| Flanges faced and drilled... | 172.00 | 200.00 | 250.00 | 320.00 | 375.00 | 475.00 | ..... |

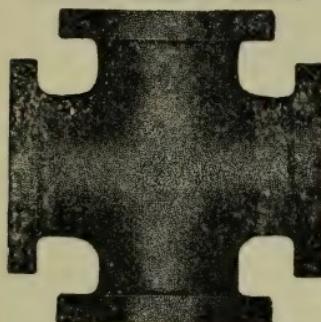
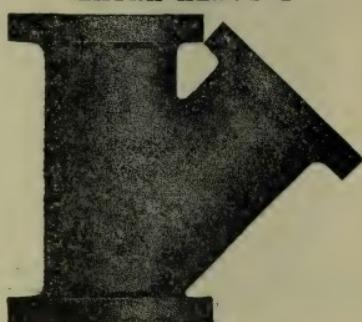
**B404****EXTRA HEAVY REDUCED FLANGED TEE**

Reduced in run or Branch. See Diam. Flanges and drilling Template, B416. Dimensions, B430 and 431.

| Pipe size.....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 |
|------------------------------|--------|--------|--------|--------|--------|--------|--------|
| Flanges faced only..... | 12.00 | 13.00 | 14.50 | 16.50 | 18.00 | 22.50 | 24.50 |
| Flanges faced and drilled... | 14.00 | 15.00 | 17.00 | 19.00 | 20.00 | 27.00 | 30.00 |
| Pipe size.....inches | 6 | 7 | 8 | 9 | 10 | 12 | 14 |
| Flanges faced only..... | 30.00 | 40.00 | 50.00 | 65.00 | 80.00 | 110.00 | 145.00 |
| Flanges faced and drilled... | 35.00 | 48.00 | 58.00 | 74.00 | 88.00 | 124.00 | 160.00 |
| Pipe size.....inches | 15 | 16 | 18 | 20 | 22 | 24 | |
| Flanges faced only..... | 180.00 | 210.00 | 265.00 | 340.00 | 400.00 | 500.00 | ..... |
| Flanges faced and drilled... | 195.00 | 225.00 | 285.00 | 370.00 | 430.00 | 540.00 | ..... |

EXTRA HEAVY FLANGE CAST-IRON FITTINGS

For 250 Pounds Working Pressure

EXTRA HEAVY CROSS**B405****EXTRA HEAVY Y****B406**

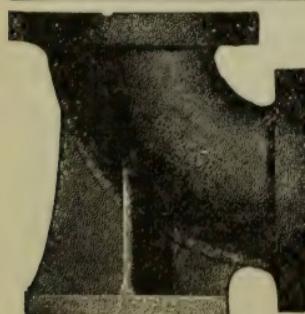
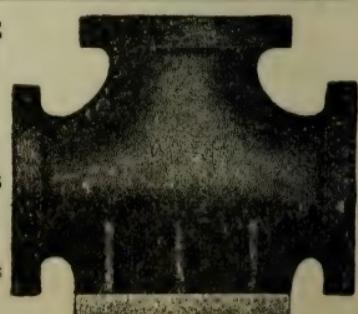
See Diam. Flanged and Template Drilling, B416, Dimensions, B430 and 431.

EXTRA HEAVY CROSS OR Y

| Pipe Size.....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 |
|---------------------------|--------|--------|--------|--------|--------|--------|--------|
| Flanges Faced only..... | 14.00 | 15.50 | 17.50 | 19.50 | 21.50 | 27.00 | 30.00 |
| Flanges Faced and Drilled | 17.00 | 18.50 | 21.00 | 23.00 | 27.00 | 33.00 | 36.00 |
| Pipe Size.....inches | 6 | 7 | 8 | 9 | 10 | 12 | 14 |
| Flanges Faced only..... | 36.00 | 48.00 | 60.00 | 78.00 | 96.00 | 132.00 | 174.00 |
| Flanges Faced and Drilled | 42.00 | 59.00 | 70.00 | 90.00 | 108.00 | 150.00 | 194.00 |
| Pipe Size.....inches | 15 | 16 | 18 | 20 | 22 | 24 | |
| Flanges Faced only..... | 215.00 | 250.00 | 320.00 | 400.00 | 480.00 | 600.00 | |
| Flanges Faced and Drilled | 240.00 | 280.00 | 350.00 | 440.00 | 540.00 | 660.00 | |

EXTRA HEAVY REDUCING CROSS OR Y

| Pipe Size.....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 |
|---------------------------|--------|--------|--------|--------|--------|--------|--------|
| Flanges Faced only..... | 16.50 | 18.00 | 20.50 | 22.50 | 25.50 | 31.00 | 34.00 |
| Flanges Faced and Drilled | 19.50 | 20.50 | 23.50 | 26.00 | 31.00 | 37.00 | 40.00 |
| Pipe Size.....inches | 6 | 7 | 8 | 9 | 10 | 12 | 14 |
| Flanges Faced only..... | 41.00 | 55.00 | 70.00 | 90.00 | 110.00 | 150.00 | 198.00 |
| Flanges Faced and Drilled | 47.00 | 66.00 | 80.00 | 102.00 | 122.00 | 168.00 | 218.00 |
| Pipe Size.....inches | 15 | 16 | 18 | 20 | 22 | 24 | |
| Flanges Faced only..... | 245.00 | 285.00 | 372.00 | 465.00 | 555.00 | 690.00 | |
| Flanges Faced and Drilled | 270.00 | 315.00 | 402.00 | 505.00 | 615.00 | 750.00 | |

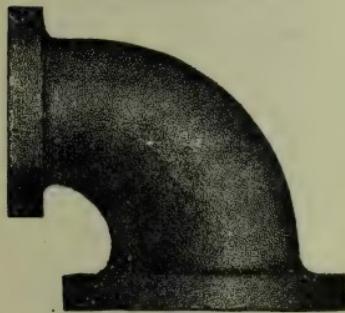
**BASE
ELBOW****B407****BASE
TEE****B408**Dimensions and prices
on application

**EXTRA HEAVY FLANGED CAST-IRON FITTINGS
SPECIAL PATTERNS**

Price and Dimensions quoted on application.

LONG RADIUS ELBOW

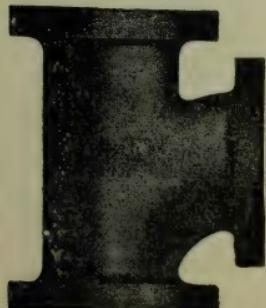
B409

REDUCING ELBOW

B410

REDUCER

B411

**SINGLE SWEEP
FLANGED TEE**

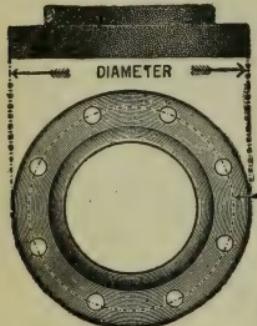
B412

**REDUCING SINGLE
SWEEP FLANGED
TEE**
Reducing in Run
or Branch

B413

EXTRA HEAVY COMPANION FLANGES

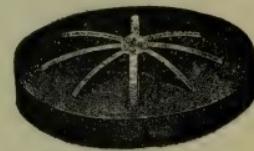
For Extra Heavy Valves and Fittings for 250 Pounds Working Pressure



B416



BLIND FLANGE

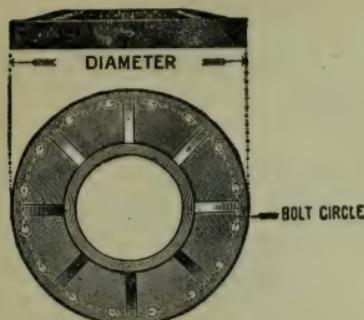


B417

B418

| Size Inches | FACED FLANGES THREADED | | BLIND FLANGES | | DRILLING | | |
|----------------|---------------------------|---------------------------------|---------------|---------------------------------|------------------------------------|-----------------------|---------------------|
| | Faced Each | Faced and Drilled Each | Faced Each | Faced and Drilled Each | Diam. Bolt Circle, Inches | Number of Bolts | Size of Bolts |
| 1 x 4½ | | | | | 3¼ | 4 | ½ x 2 |
| 1½ x 5 | | | | | 3¾ | 4 | ½ x 2½ |
| 1½ x 6 | | | | | 4½ | 4 | 5/8 x 2½ |
| 2 x 6½ | 1.50 | 2.00 | 1.75 | 2.30 | 5 | 4 | 5/8 x 2½ |
| 2½ x 7½ | 2.00 | 2.50 | 2.30 | 2.75 | 5⅞ | 4 | ¾ x 3 |
| 3 x 8¼ | 2.25 | 3.00 | 2.60 | 3.35 | 6⅝ | 8 | 5/8 x 3 |
| 3½ x 9 | 2.50 | 3.50 | 2.95 | 3.95 | 7¼ | 8 | 5/8 x 3½ |
| 4 x 10 | 3.00 | 4.00 | 3.50 | 4.50 | 7¾ | 8 | ¾ x 3½ |
| 4½ x 10½ | 3.50 | 4.50 | 4.05 | 5.05 | 8½ | 8 | ¾ x 3½ |
| 5 x 11 | 3.75 | 5.00 | 4.35 | 5.65 | 9¼ | 8 | ¾ x 3½ |
| 6 x 12½ | 4.25 | 5.75 | 4.95 | 6.50 | 10½ | 12 | ¾ x 4 |
| 7 x 14 | 5.75 | 7.25 | 6.65 | 8.10 | 11¾ | 12 | 7/8 x 4 |
| 8 x 15 | 6.50 | 8.25 | 7.50 | 9.20 | 13 | 12 | 7/8 x 4½ |
| 9 x 16 | 8.25 | 10.00 | 9.50 | 11.25 | 14 | 12 | 7/8 x 4½ |
| 10 x 17½ | 9.25 | 11.50 | 10.75 | 13.85 | 15¼ | 16 | 7/8 x 5 |
| 12 x 20 | 12.50 | 15.00 | 16.70 | 19.20 | 17¾ | 16 | 7/8 x 5 |
| 14 x 22½ | 16.00 | 18.50 | 20.40 | 22.90 | 20 | 20 | 7/8 x 5½ |
| 15 x 23½ | 20.00 | 23.00 | 25.00 | 27.95 | 21 | 20 | 1 x 5½ |
| 16 x 25 | 25.00 | 28.50 | 31.15 | 34.55 | 22½ | 20 | 1 x 5¾ |
| 18 x 27 | 32.00 | 36.00 | 38.40 | 42.40 | 24½ | 24 | 1 x 6 |
| 20 x 29½ | 36.00 | 40.00 | 43.20 | 47.10 | 26¾ | 24 | 1½ x 6½ |
| 22 x 31½ | 40.00 | 45.00 | | | 28¾ | 28 | 1½ x 6½ |
| 24 x 34 | 50.00 | 56.00 | | | 31¼ | 28 | 1½ x 6¾ |

NOTE.—All the Flanges on our Flanged Fittings are drilled in multiples of four, so that fittings may be made to face in any quarter, and holes straddle center line.



EXTRA HEAVY REDUCING COMPANION FLANGES

**WITH RIBS; FOR EXTRA HEAVY VALVES
AND FLANGED FITTINGS**

For 250 Pounds Working Pressure

B419

| Size Inches | PRICE | | Size Inches | PRICE | | Size Inches | PRICE | |
|----------------|---------------|---------------------------------|----------------|---------------|---------------------------------|----------------|---------------|---------------------------------|
| | Faced Each | Faced and Drilled Each | | Faced Each | Faced and Drilled Each | | Faced Each | Faced and Drilled Each |
| 2 x 7½ | 2.65 | 3.80 | 5x14 | 8.40 | 11.00 | 14x23½ | 34.50 | 40.00 |
| 2 x 8½ | 3.10 | 4.25 | 6x14 | 8.40 | 11.00 | 10x25 | 43.50 | 50.00 |
| 2½ x 8½ | 3.10 | 4.25 | 5x15 | 9.60 | 12.50 | 12x25 | 43.50 | 50.00 |
| 2 x 9 | 3.50 | 4.80 | 6x15 | 9.60 | 12.50 | 14x25 | 43.50 | 50.00 |
| 2½ x 9 | 3.50 | 4.80 | 7x15 | 9.60 | 12.50 | 15x25 | 43.50 | 50.00 |
| 3 x 9 | 3.50 | 4.80 | 6x16 | 12.75 | 15.75 | 12x27 | 53.00 | 59.00 |
| 2½ x 10 | 4.10 | 5.75 | 7x16 | 12.75 | 15.75 | 14x27 | 53.00 | 59.00 |
| 3 x 10 | 4.10 | 5.75 | 8x16 | 12.75 | 15.75 | 15x27 | 53.00 | 59.00 |
| 3½ x 10 | 4.10 | 5.75 | 7x17½ | 14.75 | 18.00 | 16x27 | 53.00 | 59.00 |
| 3 x 10½ | 4.85 | 6.35 | 8x17½ | 14.75 | 18.00 | 14x29½ | 58.00 | 65.00 |
| 3½ x 10½ | 4.85 | 6.35 | 9x17½ | 14.75 | 18.00 | 15x29½ | 58.00 | 65.00 |
| 4 x 10½ | 4.85 | 6.35 | 8x20 | 20.10 | 24.00 | 16x29½ | 58.00 | 65.00 |
| 3½ x 11 | 5.50 | 7.00 | 9x20 | 20.10 | 24.00 | 18x29½ | 58.00 | 65.00 |
| 4 x 11 | 5.50 | 7.00 | 10x20 | 20.10 | 24.00 | 16x31½ | 64.00 | 75.00 |
| 4½ x 11 | 5.50 | 7.00 | 9x22½ | 26.00 | 31.00 | 18x31½ | 64.00 | 75.00 |
| 4 x 12½ | 6.15 | 7.65 | 10x22½ | 26.00 | 31.00 | 20x31½ | 64.00 | 75.00 |
| 4½ x 12½ | 6.15 | 7.65 | 12x22½ | 26.00 | 31.00 | 18x34 | 79.00 | 90.00 |
| 5 x 12½ | 6.15 | 7.65 | 10x23½ | 34.50 | 40.00 | 20x34 | 79.00 | 90.00 |
| 4½ x 14 | 8.40 | 11.00 | 12x23½ | 34.50 | 40.00 | ..... | ..... | ..... |

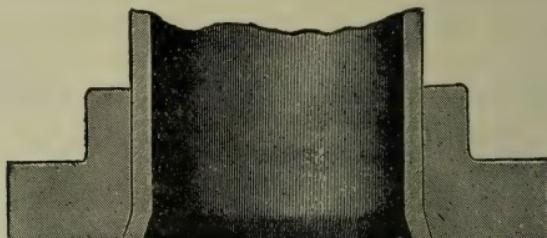
It is not possible to carry in stock a line of Reducing Flange Fittings sufficiently large to meet all demands promptly. We aim to carry a complete line of straight sizes and a moderate line of reducing tees, but we do not attempt to cover all possible sizes.

To avoid delay, we carry in stock a line of Reducing Ribbed Flanges as illustrated above. These flanges, used in connection with straight or reducing fittings carried in stock, enable us to fill orders for reduced sizes very promptly. Customers who desire fittings reduced in this manner will please specify, "Reduce by Flanges if necessary."

Reducing Flanges are made as per table above.

These flanges will always be the same thickness as the regular companion flanges of corresponding outside diameter and are always drilled to the template corresponding to the outside diameter unless otherwise ordered. Drilling Template, same as for corresponding diameters, B416.

EXTRA HEAVY SHRUNK FLANGES
SUITABLE FOR 250 POUNDS WORKING PRESSURE

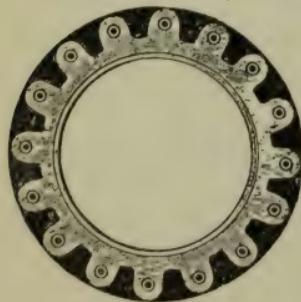


B420

The flange to be shrunk on the pipe, peened firmly into the recess, and then the face of the flange and end of pipe turned off true.

| Size.....inches | 4 | 4½ | 5 | 6 | 7 | 8 | 9 | 10 |
|---|-------|-------|-------|-------|-------|-------|-------|--------|
| Diameter of Flanges.....inches | 10 | 10½ | 11 | 12½ | 14 | 15 | 16 | 17½ |
| Price, Faced and Drilled and Shrunk on Pipe..... | 19.00 | 20.00 | 21.00 | 22.00 | 26.00 | 29.00 | 32.00 | 34.00 |
| Raised Face $\frac{1}{16}$ in. Male or Female, or Calking Recess, extra per Flange.. | .65 | .65 | .65 | .80 | .80 | 1.00 | 1.00 | 1.00 |
| Spot Facing Bolt Holes, per Flange.. | .40 | .40 | .40 | .60 | .60 | .60 | .60 | .80 |
| Size.....inches | 12 | 14 | 15 | 16 | 18 | 20 | 22 | 24 |
| Diameter of Flanges.....inches | 20 | 22½ | 23½ | 25 | 27 | 29½ | 31½ | 34 |
| Price, Faced and Drilled and Shrunk on Pipe..... | 40.00 | 45.00 | 48.00 | 53.00 | 61.00 | 70.00 | 85.00 | 100.00 |
| Raised Face $\frac{1}{16}$ in. Male or Female, or Calking Recess, extra per Flange.. | 1.25 | 1.60 | 1.60 | 2.00 | 2.50 | 3.00 | 4.00 | 5.00 |
| Spot Facing Bolt Holes, per Flange.. | .80 | 1.00 | 1.00 | 1.00 | 1.20 | 1.20 | 1.40 | 1.40 |

Template for drilling, see page



B421

STYLE C SHRUNK FLANGE

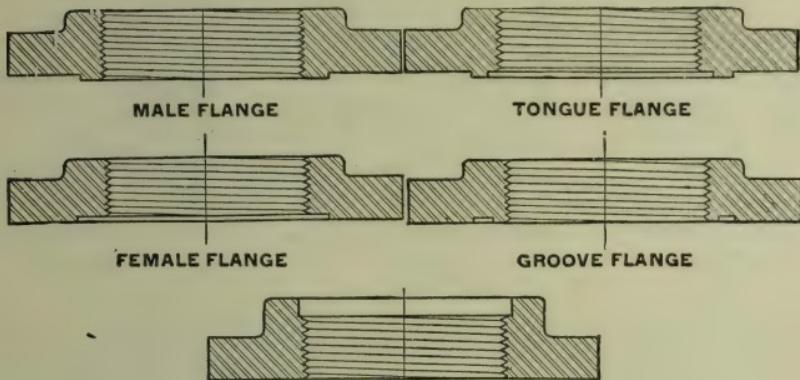
Back View

Style C is same as style D except has bosses at bolt holes as shown. This cut also shows rivet heads between the bolt bosses, showing how shrunk flanges may also be riveted onto large sizes of pipe. Prices on application.

EXTRA HEAVY TONGUE AND GROOVE FLANGES**MALE AND FEMALE FLANGES AND FLANGES WITH CALKING RECESS**

Suitable for 250 Pounds Working Pressure

B422

**PLAIN FLANGE WITH CALKING RECESS**

Add to prices of Extra Heavy Flanges.

| Size Inches | Add for Tongue or Groove Per Flange | Add for Male or Female Per Flange | Add for Calking Recess Per Flange |
|----------------|---|---|---|
| 2½ x 7½ | Net .65 | Net .65 | Net .65 |
| 3 x 8½ | Net .65 | Net .65 | Net .65 |
| 3½ x 9 | Net .65 | Net .65 | Net .65 |
| 4 x 10 | Net .65 | Net .65 | Net .65 |
| 4½ x 10½ | Net .65 | Net .65 | Net .65 |
| 5 x 11 | Net .65 | Net .65 | Net .65 |
| 6 x 12½ | Net .80 | Net .80 | Net .80 |
| 7 x 14 | Net .80 | Net .80 | Net .80 |
| 8 x 15 | Net 1.00 | Net 1.00 | Net 1.00 |
| 9 x 16 | Net 1.00 | Net 1.00 | Net 1.00 |
| 10 x 17½ | Net 1.00 | Net 1.00 | Net 1.00 |
| 12 x 20 | Net 1.25 | Net 1.25 | Net 1.25 |
| 14 x 22½ | Net 1.60 | Net 1.60 | Net 1.60 |
| 15 x 23½ | Net 1.60 | Net 1.60 | Net 1.60 |
| 16 x 25 | Net 2.00 | Net 2.00 | Net 2.00 |

Bolt holes **Spot Faced** at special price.**FORGED STEEL COMPANION FLANGES****FOR 250 POUNDS WORKING PRESSURE B424**

(Not Illustrated)

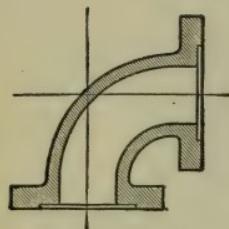
| Size....inches | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
|-------------------------------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Diam. Flanges, .....inches | 7½ | 8½ | 9 | 10 | 10½ | 11 | 12½ | 14 | 15 | 16 | 17½ | 20 |
| Faced only, .....each | 7.00 | 8.00 | 9.25 | 10.75 | 12.25 | 13.50 | 16.50 | 19.00 | 22.00 | 27.50 | 37.00 | 46.00 |
| Faced and Drilled, each | 8.00 | 9.00 | 10.50 | 12.00 | 13.50 | 15.00 | 18.00 | 21.00 | 24.00 | 30.00 | 40.00 | 50.00 |
| Thickness Flanges,inches | 1½ | 2¼ | 3½ | 4½ | 5½ | 6½ | 1 | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/8 | 1 1/4 |

Drilling is the same as Extra Heavy Cast Flanges, B416.

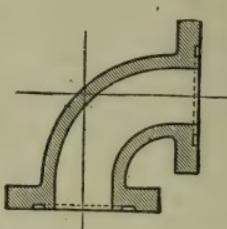
Larger sizes quoted on application.

EXTRA HEAVY FITTINGS

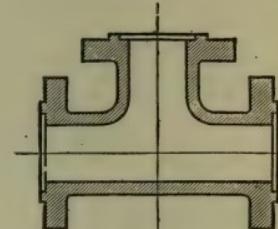
Suitable for 250 Pounds Working Pressure
Male and Female and Tongued Grooved Fittings



Elbow with Female Flanges



Elbow with Grooved Flanges



Tee with Tongued Flanges

B425

Extra per Fitting with Either Tongued, Grooved, Male or Female Flanges

| Size..... | Inches | 2 1/2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 12 | 14 | 15 | 16 |
|-----------------------------------|--------|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| Add to Flanged Elbows Net, each | | 1.25 | 1.25 | 1.25 | 1.25 | 1.50 | 1.50 | 2.00 | 2.00 | 2.00 | 2.50 | 3.25 | 3.25 | 4.00 |
| Add to Flanged Tees.... Net, each | | 1.75 | 1.75 | 1.75 | 1.75 | 2.00 | 2.00 | 2.50 | 2.50 | 2.50 | 3.00 | 4.00 | 4.00 | 5.00 |
| Add to Flanged Crosses Net, each | | 2.25 | 2.25 | 2.25 | 2.25 | 2.50 | 2.50 | 3.00 | 3.00 | 3.00 | 3.50 | 5.00 | 5.00 | 6.00 |
| Add to Flanged Laterals Net,each | | 2.25 | 2.25 | 2.25 | 2.25 | 2.50 | 2.50 | 3.00 | 3.00 | 3.00 | 3.50 | 5.00 | 5.00 | 6.00 |

Bolt Holes, Spot Faced at special price.

Semi-steel Fittings quoted on application.

A drawing of these fittings should accompany order to avoid mistakes.

The length, center to face and face to face, of Male, Female, Tongued or Grooved Flanged Fittings is the same as plain faced Flanged Fittings, the measurements being from face of Flange and not from tongue or recess.

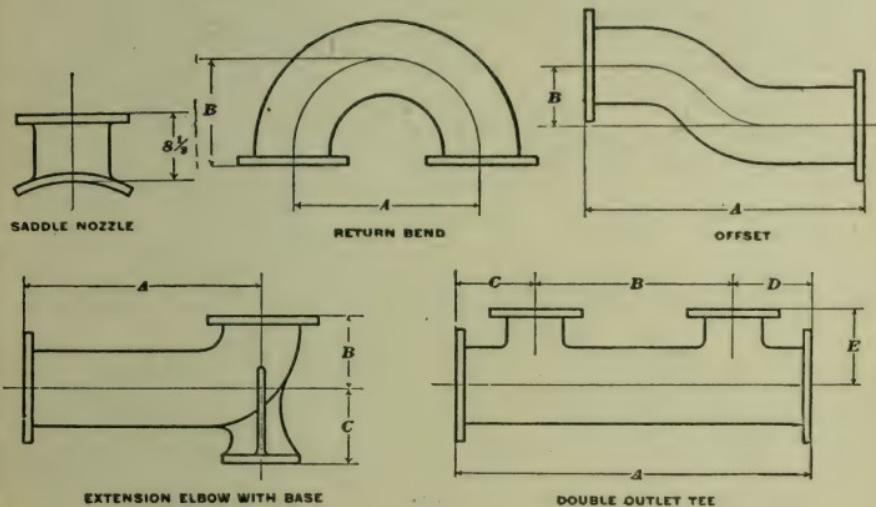
Gaskets for Flanged Fittings and Valves. B426.

| Size Inches | RING GASKETS, $\frac{1}{16}$ INCH THICK | | | | Size Inches | FULL GASKETS, $\frac{1}{16}$ IN. THICK | | | | |
|----------------|---|----------------------------|----------|--|----------------|--|------------------------|----------|------------------------------------|--|
| | Inside Diam. Inches | Outside Diameter Inches | | Rainbow or Corrugated Copper Each | | Inside Diam. Ins. | O. S. Diam., Inches | | Rainbow or Cor. Cop. Each | |
| | | Standard | Ex. Hea. | | | | Stand. | Ex. Hea: | | |
| 2 | 2 | 4 | 4 1/4 | .45 | 2 | 2 | 6 | 6 1/2 | .85 | |
| 2 1/2 | 2 1/2 | 5 | 5 | .55 | 2 1/2 | 2 1/2 | 7 | 7 1/2 | 1.10 | |
| 3 | 3 | 5 1/4 | 6 | .65 | 3 | 3 | 7 1/2 | 8 1/4 | 1.75 | |
| 3 1/2 | 3 1/2 | 6 1/4 | 6 1/2 | .75 | 3 1/2 | 3 1/2 | 8 1/2 | 9 | 1.85 | |
| 4 | 4 | 6 3/4 | 7 | .90 | 4 | 4 | 9 | 10 | 2.00 | |
| 4 1/2 | 4 1/2 | 7 | 7 3/4 | 1.00 | 4 1/2 | 4 1/2 | 9 1/4 | 10 1/2 | 2.25 | |
| 5 | 5 | 7 3/4 | 8 1/2 | 1.10 | 5 | 5 | 10 | 11 | 2.50 | |
| 6 | 6 | 8 3/4 | 9 3/4 | 1.30 | 6 | 6 | 11 | 12 1/2 | 3.00 | |
| 7 | 7 | 10 | 11 | 1.60 | 7 | 7 | 12 1/2 | 14 | 3.50 | |
| 8 | 8 | 11 | 12 | 2.25 | 8 | 8 | 13 1/2 | 15 | 4.50 | |
| 9 | 9 | 12 1/2 | 13 | 2.75 | 9 | 9 | 15 | 16 | 5.50 | |
| 10 | 10 | 13 1/2 | 14 1/4 | 3.00 | 10 | 10 | 16 | 17 1/2 | 6.00 | |
| 12 | 12 | 16 | 16 1/4 | 4.25 | 12 | 12 | 19 | 20 | 8.00 | |
| 14 | 13 1/4 | 17 1/4 | 19 | 5.00 | 14 | 13 1/4 | 21 | 22 1/2 | 8.50 | |
| 15 | 14 1/4 | 19 | 20 | 5.25 | 15 | 14 1/4 | 22 1/4 | 23 1/2 | 9.00 | |
| 16 | 15 1/4 | 20 1/4 | 21 1/4 | 5.50 | 16 | 15 1/4 | 23 1/2 | 25 | 9.25 | |
| 18 | 17 1/4 | 21 1/4 | 23 1/2 | 6.00 | 18 | 17 1/4 | 25 | 27 | 11.00 | |

SPECIAL FLANGED FITTINGS

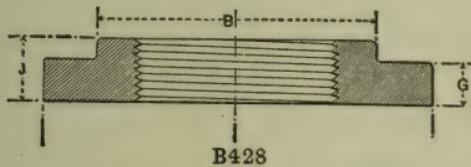
SUITABLE FOR 250 POUNDS WORKING PRESSURE

(Also Made Lighter for Ordinary Pressures)



B427

Prices quoted on application.

DIMENSIONS OF EXTRA HEAVY COMPANION FLANGES

B428

| Pipe size | Inches | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{4}$ | 4 | $4\frac{1}{2}$ | 5 |
|------------------------------|--------|-----------------|------------------|-----------------|-----------------|------------------|------------------|----------------|
| Diameter of flange | Inches | $6\frac{1}{2}$ | $7\frac{1}{2}$ | $8\frac{1}{4}$ | 9 | 10 | $10\frac{1}{2}$ | 11 |
| Thickness " | " | $\frac{7}{8}$ | 1 | $1\frac{1}{8}$ | $1\frac{1}{16}$ | $1\frac{1}{4}$ | $1\frac{5}{16}$ | $1\frac{3}{8}$ |
| Length of thread, Pittsburgh | " | $1\frac{5}{16}$ | $1\frac{7}{16}$ | $1\frac{1}{2}$ | $1\frac{1}{16}$ | $1\frac{11}{16}$ | $1\frac{3}{4}$ | $1\frac{7}{8}$ |
| " " Crane | " | $1\frac{9}{16}$ | $1\frac{15}{16}$ | $1\frac{9}{16}$ | $1\frac{5}{8}$ | $1\frac{3}{4}$ | $1\frac{11}{16}$ | $1\frac{7}{8}$ |

| Pipe Size | Inches | 6 | 7 | 8 | 9 | 10 | 12 | 14 |
|------------------------------|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|
| Diameter of flange | Inches | $12\frac{1}{2}$ | 14 | 15 | 16 | $17\frac{1}{2}$ | 20 | $22\frac{1}{2}$ |
| Thickness " | " | $1\frac{1}{8}$ | $1\frac{1}{2}$ | $1\frac{5}{8}$ | $1\frac{3}{4}$ | $1\frac{7}{8}$ | 2 | $2\frac{1}{8}$ |
| Length of thread, Pittsburgh | " | $1\frac{1}{16}$ | $2\frac{1}{16}$ | $2\frac{1}{8}$ | $2\frac{3}{16}$ | $2\frac{1}{8}$ | $2\frac{7}{16}$ | $2\frac{9}{16}$ |
| " " Crane | " | 2 | $2\frac{1}{16}$ | $2\frac{1}{16}$ | $2\frac{1}{4}$ | $2\frac{3}{8}$ | $2\frac{9}{16}$ | $2\frac{11}{16}$ |

| Pipe size | Inches | 15 | 16 | 18 | 20 | 22 | 24 | |
|------------------------------|--------|-----------------|----------------|-----------------|-----------------|-----------------|----------------|--|
| Diameter of flange | Inches | $23\frac{1}{2}$ | 25 | 27 | $29\frac{1}{2}$ | $31\frac{1}{2}$ | 34 | |
| Thickness " | " | $2\frac{1}{16}$ | $2\frac{1}{4}$ | $2\frac{3}{8}$ | $2\frac{1}{2}$ | $2\frac{5}{8}$ | $2\frac{3}{4}$ | |
| Length of thread, Pittsburgh | " | $2\frac{3}{4}$ | $2\frac{7}{8}$ | $3\frac{1}{16}$ | $3\frac{7}{16}$ | $3\frac{5}{8}$ | | |
| " " Crane | " | $2\frac{1}{16}$ | $2\frac{7}{8}$ | $3\frac{1}{16}$ | $3\frac{7}{16}$ | $3\frac{5}{8}$ | | |

Semi-steel Fittings quoted on application.

DIMENSIONS

PITTSBURG**EXTRA HEAVY FLANGED FITTINGS—B430**

Reduction in the run of a Tee or Cross does not change the face to face measure. Diameter, etc., of Flanges on Fittings is same as Companion Flanges, B416.

| Pipe, Size of Run..in. | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 |
|------------------------------|-----|-----|-----|-----|----|-----|-----|-----|----|-----|
| Face to Face, AA..in. | 10½ | 11½ | 12½ | 13½ | 14 | 15 | 16 | 17 | 19 | 20 |
| Center to Face, A.. " | 5¼ | 5¾ | 6½ | 6¾ | 7 | 7½ | 8 | 8½ | 9½ | 10 |
| C. to F. 45°, Ell C. " | 3 | 3½ | 3½ | 4 | 4½ | 4½ | 4¾ | 5¼ | 5¾ | 6 |
| C. to F. Y, Short End D... " | 2½ | 2½ | 3 | 3½ | 3½ | 3¾ | 4 | 4½ | 4½ | 4¾ |
| C. to F. Y, Long End E... " | 8½ | 9 | 10½ | 11 | 12 | 12¾ | 13¾ | 15¾ | 17 | 18½ |

| Pipe, Size of Run..in. | 9 | 10 | 12 | 14 | 15 | 16 | 18 | 20 | 22 | 24 |
|------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Face to Face, AA..in. | 21½ | 23 | 25½ | 29 | 30 | 31 | 34 | 36 | 39 | 42 |
| Center to Face, A.. " | 10¾ | 11½ | 12¾ | 14½ | 15 | 15½ | 17 | 18 | 19½ | 21 |
| C. to F. 45°, Ell C. " | 6¾ | 6½ | 7½ | 8½ | 8¾ | 9 | 9½ | 10¾ | 11 | 11½ |
| C. to F. Y, Short End D... " | 5¼ | 5½ | 6½ | 6½ | 7 | 7¾ | 8¼ | 8½ | 9¼ | 10 |
| C. to F. Y, Long End E... " | 19¾ | 21 | 24 | 27¾ | 28¾ | 30¾ | 32¼ | 35 | 38 | 41 |

Reducing Y's are same measurements as straight Y's.

REDUCED TEES AND CROSSES

Reduction on run does not change face to face measurement as given in above table. Tees and Crosses, 8-inch and smaller, with reduced outlet, take same measurements face to face (F. F. or N. N.) and center to face (K. or O.) as straight fittings. (See above table.)

Tees and Crosses, 9-inch and larger, with outlet 8-inch and smaller, all have same dimensions face to face (F. F. or N. N.) and center to face (K. or O.) as that size fitting with 8-inch outlet. (See table below.)

**TABLE SHOWING DIMENSIONS OF TEES AND CROSSES,
9-INCH AND LARGER, HAVING REDUCED OUTLET**

Top line shows center to face measurement of outlets. Right-hand column shows face to face measurements of run.

CENTER TO FACE OF OUTLETS K. OR O.

| 10½ | 11½ | 12¾ | 14½ | 15 | 15½ | 17 | 18 | 19½ | 21 | Face to Face (F. F. or N. N.) |
|-----|-----|-----|-----|----|-----|----|----|-----|----|-------------------------------|
|-----|-----|-----|-----|----|-----|----|----|-----|----|-------------------------------|

SIZE OF FITTINGS

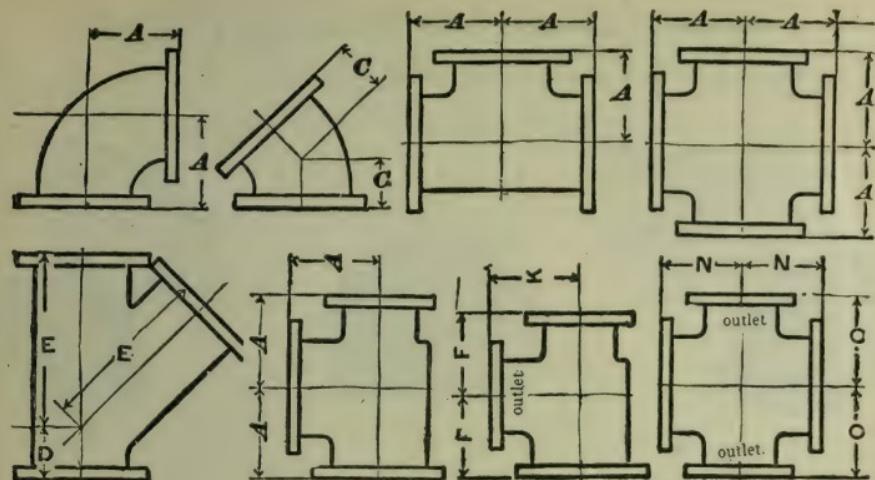
| * | 10x8 | 12x8 | 14x8 | 15x8 | 16x8 | 18x8 | 20x8 | 22x8 | 24x8 | 20 |
|--------|------|-------|-------|-------|-------|-------|-------|-------|-------|-----|
| 1 *9x8 | | | | | | | | | | 21½ |
| | 10x9 | | | | | | | | | 23 |
| | | 14x12 | 15x12 | 16x12 | 18x12 | 20x12 | 22x12 | 24x12 | | |
| | | 12x10 | 14x10 | 15x10 | 16x10 | 18x10 | 20x10 | 22x10 | 24x10 | 25½ |
| | | 12x9 | 14x9 | 15x9 | 16x9 | 18x9 | 20x9 | 22x9 | 24x9 | |
| | | | 15x14 | | | | | | | 30 |
| | | | | | | | 20x16 | 22x16 | 24x16 | |
| | | | | | | | 20x15 | 22x15 | 24x15 | 31 |
| | | | | | | | 20x14 | 22x14 | 24x14 | |
| | | | | | | | 18x16 | | | |
| | | | | | | | 18x15 | | | |
| | | | | | | | 18x14 | | | |

*9-inch and larger Tees and Crosses, with outlets smaller than 8-inch, are same dimensions face to face and center to face as fittings with 8-inch branch.

8-inch and smaller Reducing Tees and Crosses are same dimensions face to face and center to face as straight fittings.

Tees with outlet larger than the run take same measurements face to face and center to face as a straight Tee of the same size as the outlet.

| | | | |
|-------|-------|-------|----|
| 20x18 | 22x20 | 24x20 | 36 |
| 22x18 | 24x18 | | |
| | | 24x22 | 39 |



B431—DIMENSIONS

CRANE'S EXTRA HEAVY FLANGED FITTINGS

Reducing Tees and Crosses (except those shown in table 3) are same dimensions, face to face of run, and center to face of branches, as straight fittings. Tables 1 and 2.

The face to face dimensions of flanged fittings are not changed by a reduction on the run.

Diameter, etc., of flanges on fittings, same as Companion Flanges, B416.

TABLE NO. 1

| Size of Run..... | inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 | 9 |
|----------------------------------|--------|----|-----|----|-----|-----|-----|----|-----|-----|----|-----|
| Outlets, A, F, K, N, O..... | | | | | | | | | | | | |
| Face to Face AA, FF, NN, 00..... | inches | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 20 | 21 |
| Center " " A, F, K, N, O.... | " | 5 | 5½ | 6 | 6½ | 7 | 7½ | 8 | 8½ | 9 | 10 | 10½ |
| " " 45° Ell C..... | " | 3 | 3½ | 3½ | 4 | 4½ | 4½ | 5 | 5½ | 6 | 6 | 6½ |
| " " Y Short End-D.. | " | 2½ | 2½ | 3 | 3 | 3 | 3½ | 3½ | 4 | 4½ | 5 | 5 |
| " " Y Long End-E.. | " | 9 | 10½ | 11 | 12½ | 13½ | 14½ | 15 | 17½ | 18½ | 20 | 21 |

TABLE NO. 2

| Size of Run..... | inches | 10 | 12 | 14 | 15 | 16 | 18 | 20 | 22 | 24 |
|----------------------------------|--------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Outlets | inches | 7 to 10-in. | 9 to 12-in. | 10 to 14 in. | 10 to 15-in. | 12 to 16-in. | 14 to 18-in. | 16 to 20-in. | 16 to 22-in. | 16 to 24-in. |
| Face to face AA, FF, NN, 00..... | inches | 23 | 26 | 29 | 30 | 32 | 34 | 37 | 40 | 44 |
| Center " " A, F, K, N, 0.... | " | 11½ | 13 | 14½ | 15 | 16 | 17 | 18½ | 20 | 22 |
| " " 45° Ell C..... | " | 7 | 8 | 8 | 8½ | 9 | 9½ | 10 | 10½ | 11½ |
| " " Y Short End-D.. | " | 5½ | 6 | 6½ | 6½ | 7½ | 8 | 8½ | 9½ | 10½ |
| " " Y Long End-E.. | " | 23 | 26½ | 30 | 31½ | 33 | 36 | 38 | 41½ | *44 |

Reducing Laterals being made to order, we are unable to give dimensions.

TABLE NO. 3—Reducing Tees and Crosses not Mentioned Above

| Size of Run..... | inches | 10 | 12 | 14 | 15 | 16 | 18 | 20 | 22 | 24 |
|-------------------------------|--------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|
| Outlets..... | inches | 6 and smaller | 8 and smaller | 9 and smaller | 9 and smaller | 10 and smaller | 12 and smaller | 14 and smaller | 14 and smaller | 14 and smaller |
| Face to Face FF, NN..... | inches | 18 | 21 | 22 | 23 | 24 | 27 | 30 | 30 | 30 |
| Center " " Outlet K, O... " " | " | 11 | 12½ | 13½ | 13½ | 15 | 16½ | 17½ | 18½ | 19½ |

Tees having outlet larger than the run will be the same length center to face of all openings as a Tee with all openings of the size of the outlet.

Example: A 12" x 12" x 18" Tee will be governed by the dimensions of the 18-inch Tee, namely, 17 inches center to face of all openings, and 34 inches face to face.

EXTRA HEAVY CAST-IRON FITTINGS

Screwed

For a Working Pressure of 250 Pounds

**EXTRA HEAVY
ELBOW**

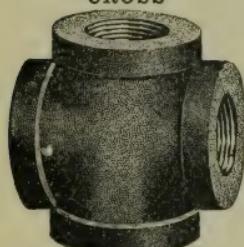
B432

**EXTRA HEAVY
TEE**

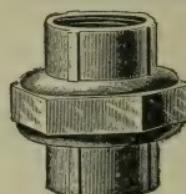
B434

**EXTRA HEAVY
45° ELBOW**

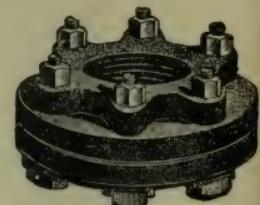
B433

**EXTRA HEAVY
CROSS**

B435

**EXTRA HEAVY
SCREW UNION**See B190 and 194
Kewanee and Dart

B436

**EXTRA HEAVY
FLANGE UNION**

B437

EXTRA HEAVY CAST-IRON FITTINGS

For Plugs, see solid plugs, B203½.

| Size..... | inches | 1/2 | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 3 1/2 |
|--------------------------|--------|-------|-------|-------|-------|-------|-------|-------|--------|-------|
| Elbows..... | each | .25 | .30 | .35 | .45 | .60 | .75 | 1.25 | 2.00 | 2.75 |
| " Reducing..... | " | .. | .42 | .50 | .65 | .85 | 1.05 | 1.75 | 2.85 | 4.00 |
| " 45°..... | " | .. | .40 | .44 | .55 | .70 | .90 | 1.50 | 2.50 | 3.50 |
| Tees..... | " | .40 | .50 | .55 | .70 | .90 | 1.15 | 1.80 | 3.00 | 4.25 |
| " Reducing..... | " | .. | .65 | .75 | 1.00 | 1.25 | 1.60 | 2.50 | 4.25 | 6.00 |
| Crosses..... | " | .. | .75 | 1.00 | 1.25 | 1.60 | 2.00 | 3.25 | 5.50 | 7.75 |
| " Reducing..... | " | .. | 1.05 | 1.25 | 1.75 | 2.15 | 2.85 | 4.60 | 7.75 | 11.00 |
| Flange Union*..... | " | .. | .70 | .80 | 1.00 | 1.15 | 1.50 | 1.90 | 2.25 | 2.70 |
| Number Bolts, Union..... | .. | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 6 | 6 |
| Size..... | inches | 4 | 4 1/2 | 5 | 6 | 7 | 8 | 10 | 12 | ... |
| Elbows..... | each | 3.50 | 4.25 | 5.50 | 8.00 | 12.00 | 17.00 | 28.00 | 40.00 | ... |
| " Reducing..... | " | 4.75 | 5.75 | 7.50 | 10.00 | 15.00 | 22.00 | 35.00 | 50.00 | ... |
| " 45°..... | " | 4.50 | 5.50 | 6.75 | 9.75 | 14.50 | 21.00 | 34.00 | 48.00 | ... |
| Tees..... | " | 5.50 | 6.75 | 8.25 | 12.00 | 18.00 | 25.00 | 42.00 | 60.00 | ... |
| " Reducing..... | " | 7.25 | 9.00 | 11.50 | 15.00 | 23.00 | 32.00 | 53.00 | 75.00 | ... |
| Crosses..... | " | 10.00 | 13.00 | 15.00 | 22.00 | 33.00 | 45.00 | 75.00 | 110.00 | ... |
| " Reducing..... | " | 13.75 | 17.50 | 21.00 | 27.50 | 42.00 | 57.00 | 94.00 | 138.00 | ... |
| Flange Union..... | " | 3.15 | 4.00 | 4.75 | 6.00 | 8.25 | 10.50 | ... | ... | ... |
| Number Bolts, Union..... | .. | 7 | 8 | 8 | 9 | 10 | 10 | ... | ... | ... |

Galvanized Extra Heavy Fittings, double above list. 9-in. fittings special.

*See also Kewanee and Dart Flange Unions, B196-7.

EXTRA HEAVY MALLEABLE FITTINGS**SQUARE BEAD—FOR 250 POUNDS WORKING PRESSURE**

B438



B439

| Size | inch | 1/4 | 3/8 | 1/2 | 5/8 | 1 | 1 1/4 | 1 1/2 |
|----------------|------|-----|-----|-----|------|------|-------|-------|
| Elbow..... | each | .20 | .25 | .30 | .35 | .40 | .55 | .70 |
| 45° Elbow..... | " | .25 | .30 | .35 | .42 | .50 | .65 | .85 |
| Tee..... | " | .30 | .40 | .45 | .50 | .60 | .80 | 1.05 |
| Cross..... | " | .60 | .80 | .90 | 1.00 | 1.20 | 1.60 | 2.10 |

| Size | inches | 2 | 2 1/2 | 3 | 3 1/2 | 4 | 5 | 6 |
|----------------|--------|------|-------|------|-------|-------|-------|-------|
| Elbow..... | each | .90 | 1.50 | 2.40 | 3.25 | 4.25 | 6.50 | 9.50 |
| 45° Elbow..... | " | 1.10 | 1.85 | 2.85 | 4.00 | 5.00 | ... | ... |
| Tee..... | " | 1.35 | 2.25 | 3.60 | 5.00 | 6.50 | 9.75 | 14.25 |
| Cross..... | " | 2.70 | 4.50 | 7.20 | 10.00 | 13.00 | 19.50 | 28.50 |

Tees can also be furnished in reducing sizes.

CAR HEATER FITTINGS**CAST IRON—EXTRA HEAVY—FOR RAILROAD USE**

ELBOW



B440

CAST-IRON COUPLING



B441

RETURN BEND



B442

TEE



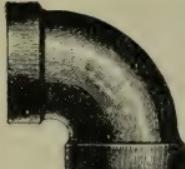
B443

| Size | inches | 1/2 | 3/4 | 1 | 1 1/4 | 1 1/2 | 1 1/4 x 1 1/4 | 2 |
|---------------------|--------|-----|-----|-----|-------|-------|---------------|-----|
| Elbows, R. H..... | each | .22 | .25 | .27 | .30 | .45 | .45 | .55 |
| " R. and L..... | " | .22 | .25 | .27 | .30 | .45 | .45 | .55 |
| Coupling, R. H..... | " | ... | ... | .25 | .30 | .45 | ... | .55 |
| " R. and L..... | " | ... | ... | .35 | .40 | .55 | ... | .65 |

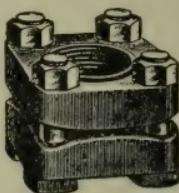
| Size...inches | 1/2 | 3/4 | 1 | 1 1/4 | 1 1/4 x 1 1/4 | 1 1/4 x 1 1/4 | 1 1/2 x 1 1/4 | 2 |
|-------------------------------------|-----|-------|-----|-------|---------------|---------------|---------------|-----|
| Tees....each | .30 | .35 | .40 | .45 | .45 | .45 | .65 | .85 |
| Distance between Centers.....inches | | 2 5/8 | 3 | 4 | 5 | 7 1/2 | 8 | |
| Return Bends, 1 1/4-inch.....each | | | | | | | | |
| | .45 | .50 | .60 | .70 | 1.10 | 1.10 | | |

EXTRA HEAVY HYDRAULIC FITTINGS MALLEABLE IRON

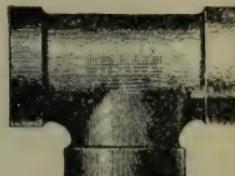
For 800 Pounds Working Pressure. Tested to 2,000 Pounds



B444



B445



B446

Price each

| Inches | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 |
|--------------|---------------|---------------|---------------|---------------|------|----------------|----------------|------|----------------|------|----------------|-------|
| Elbow | .20 | .25 | .30 | .35 | .40 | .55 | .70 | .90 | 1.50 | 2.40 | 3.25 | 4.25 |
| Tee | .30 | .40 | .45 | .50 | .60 | .80 | 1.05 | 1.35 | 2.25 | 3.60 | 5.00 | 6.50 |
| Cross | .60 | .80 | .90 | 1.00 | 1.20 | 1.60 | 2.10 | 2.70 | 4.50 | 7.20 | 10.00 | 13.00 |
| Flange Union | | | | | 1.50 | 1.75 | 2.25 | 3.00 | 6.00 | 9.00 | | |

Reducing fittings can be furnished of Malleable Iron from Standard Cast-Iron Fitting pattern.

We specify these fittings tested to 2,000 pounds, but we have subjected them to a hydraulic pressure of 5,000 pounds without breaking.

They are, therefore, suitable for a very much higher working pressure than 800 pounds.

When fittings are wanted for a higher working pressure than 800 pounds, or larger sizes, please state at what working pressure they are to be used.

EXTRA HEAVY HYDRAULIC BRASS SCREW UNIONS

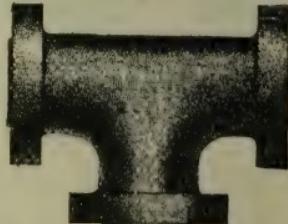
| Size..... | Inches | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|-----------|--------|---------------|---------------|---------------|---------------|------|----------------|----------------|-------|
| Each | | 1.25 | 1.50 | 2.00 | 3.00 | 4.00 | 5.00 | 7.00 | 10.00 |

Hydraulic Brass Ells, Tees, Crosses, and Couplings quoted on application.

HYDRAULIC FLANGED CAST-IRON FITTINGS Ells, Tees, and Crosses for 800 Pounds Working Pressure



B447



B448

With Male or Female Flanges. Prices on application.

HYDRAULIC COMPANION FLANGES

Malleable Iron

Quoted on application.

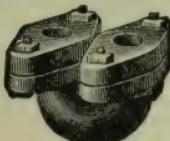
Male or Female

AMMONIA VALVES AND FITTINGS—GLAND END

STRAIGHT VALVE B



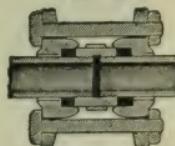
CHECK VALVE C



RETURN BEND E



TEE D



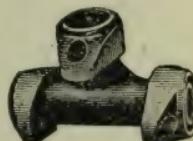
COUPLING F

OVAL AND SQUARE FLANGE VALVES AND FITTINGS

STRAIGHT VALVE G



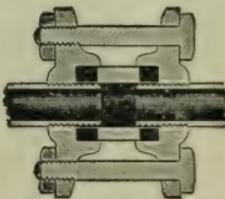
ELBOW H



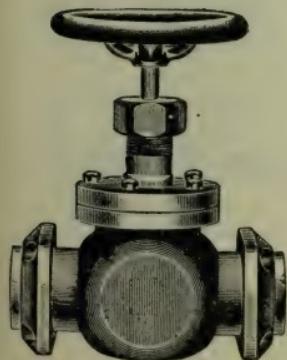
TEE I



RETURN BEND K



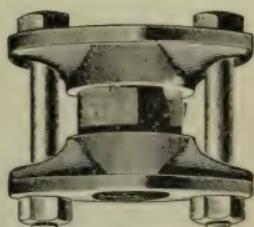
SECTION VIEW



STRAIGHT VALVE J



TEE M



BOYLE UNION

These pages only illustrate a few fittings of the different style of Ammonia Fittings. Specify just what is wanted and we will quote prices. See B76 and 77 for Ammonia Coils.

AMMONIA VALVES AND FITTINGS—SCREWED

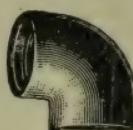
Also Made With Regular Round Flanges



Straight Valve P



Tee Q



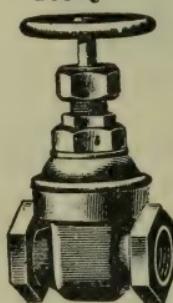
Ell R



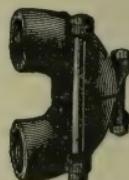
Recessed Tee S



Asbestos Packed Cock T



Gate Valve U



Split Return Bend V

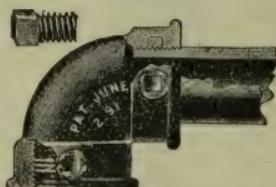


Brine Return Bend W

TIGHT JOINT AMMONIA FITTINGS



X

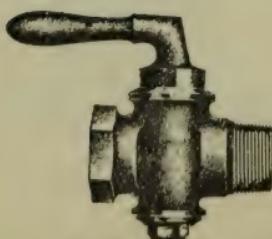


Y

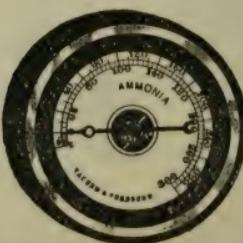


Z

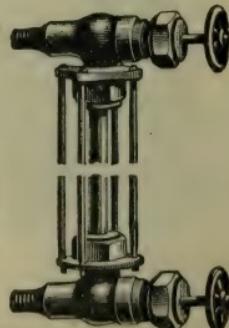
MISCELLANEOUS



Brine Cock



Pressure or Vacuum Gauge

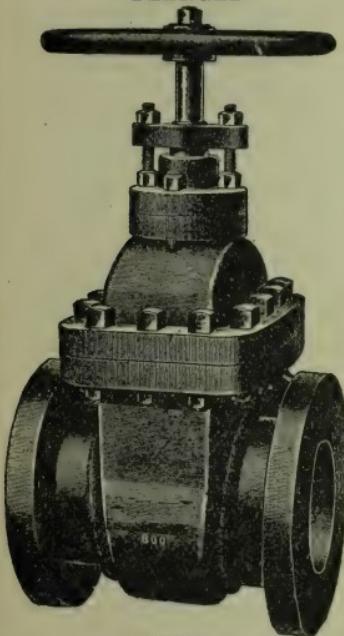


Liquid Am. Gauge

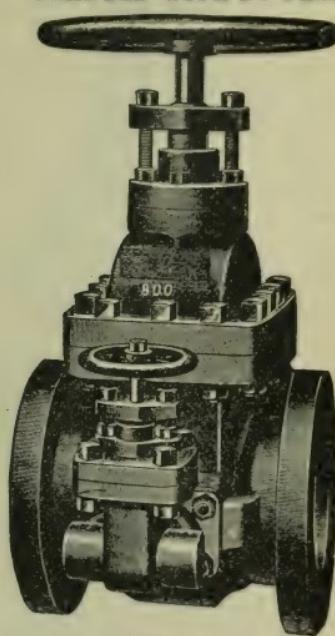
These pages illustrate a few fittings of the different styles of Ammonia Fittings. Specify your requirements and we will quote prices. See B76 and 77 for Am. Coils.

EXTRA HEAVY IRON BODY
STRAIGHT-WAY GATE VALVES

With Hard Metal Seats Screwed in—Stationary Brass Stem
 Tested 800 pounds—for 250 pounds Working Pressure

FLANGED**B500**

Screwed 2 to 10 inch,
 Flanged all sizes

FLANGED WITH BY-PASS**B501**

Flanged Only
 6 to 16 inch

PRICE LIST

Brass or "High Duty Metal" trimmed, also Crane Ferrosteel Valves
 Screwed and Flanged

| Size..... |inches | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 3 1/2 | 4 | 4 1/2 | 5 |
|---------------------------|-------------|--------|--------|--------|--------|--------|--------|---------------|--------|--------|
| A..... | each | 20.00 | 22.50 | 27.50 | 35.00 | 40.00 | 45.00 | 50.00 | 60.00 | 65.00 |
| End to End, Screwed..... | inches | 5 1/2 | 6 1/4 | 7 | 8 | 9 | 10 | 11 | 12 1/4 | 13 1/4 |
| Face to Face, Flanged.. | " | 6 1/2 | 7 1/2 | 8 1/2 | 9 1/2 | 11 1/8 | 11 1/8 | 12 | 13 1/4 | 15 |
| Diameter Flanges..... | " | 5 | 6 | 6 1/2 | 7 1/4 | 8 1/4 | 9 | 10 | 10 1/4 | 11 |
| Size..... |inches | 6 | 7 | 8 | 9 | 10 | *12 | *14-15 | *16 | |
| A..... | each | 80.00 | 100.00 | 120.00 | 160.00 | 200.00 | 300.00 | 400.00 | 550.00 | |
| A with By-pass | " | 110.00 | 130.00 | 150.00 | 200.00 | 250.00 | 350.00 | 450.00 | 600.00 | |
| FacetoF. Flgd or Sd..ins. | " | 15 1/2 | 16 1/4 | 16 1/2 | 17 | 18 | 19 1/4 | 22 1/4 | 24 | |
| Diam. Flanges .." | | 12 1/2 | 14 | 15 | 16 | 17 1/2 | 20 | 22 1/2-23 1/2 | 25 | |

Template for Drilling, same as "Companion Flanges, Extra Heavy," see index.

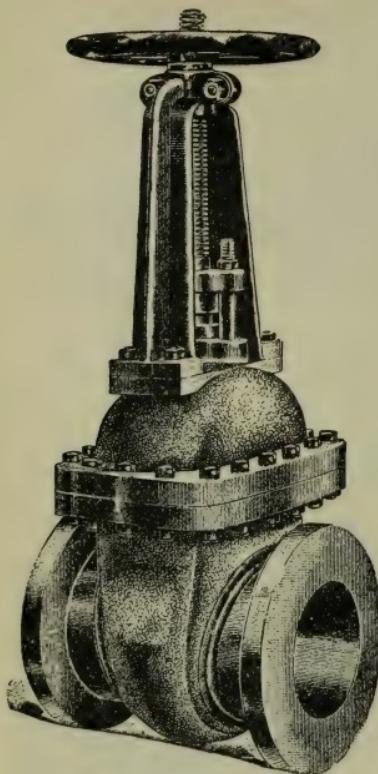
*Flanged only 12-inch and larger. Larger sizes quoted on application.

For Tongued and Grooved or Male and Female Flanges, see index.

These valves may be packed while wide open.

Angle Gates and Valves with Ribbed Bodies quoted on application.

Valves for Super-Heated Steam quoted on applic. on.



B502

EXTRA HEAVY
STRAIGHT WAY VALVES.

WITH OUTSIDE SCREW AND YOKE
With Hard Metal Seats Screwed in

SUITABLE FOR A WORKING PRESSURE
OF 250 POUNDS

Tested to 800 Pounds Pressure per
Square Inch

SCREWED OR FLANGED

VALVES WITH BY-PASS ARE FLANGED
ONLY

List Prices of
**IRON BODY BRASS MOUNTED
VALVES**

Also with "High Duty Metal" Trimming
and Crane Ferrosteel Valves

SCREWED OR FLANGED

| Size | inches | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 3 1/2 | 4 | 4 1/2 | 5 |
|-----------------------------|--------|-------|-------|-------|-------|--------|--------|-------|--------|--------|
| Each..... | | 27.50 | 30.00 | 35.00 | 45.00 | 50.00 | 60.00 | 65.00 | 75.00 | 85.00 |
| End to End Screwed...inches | | 5 1/2 | 6 1/4 | 7 | 8 | 9 | 10 | 11 | 12 1/4 | 13 1/2 |
| Face to Face Flanged " | | 6 1/2 | 7 1/2 | 8 1/2 | 9 1/2 | 11 1/8 | 11 1/8 | 12 | 13 1/4 | 15 |
| Diameter Flanges.... " | | 5 | 6 | 6 1/2 | 7 1/2 | 8 3/4 | 9 | 10 | 10 1/2 | 11 |

| Size | inches | 6 | 7 | 8 | 9 | 10 | *12 | *14-15 | *16 | .... |
|-----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|
| Each..... | | 105.00 | 125.00 | 150.00 | 200.00 | 250.00 | 350.00 | 450.00 | 600.00 | .... |
| With By-pass (Flanged only) | | 135.00 | 155.00 | 185.00 | 240.00 | 300.00 | 400.00 | 500.00 | 650.00 | .... |
| End to End Screwed...inches | | 15 1/2 | 16 1/4 | 16 1/2 | 17 | 18 | .... | .... | .... | .... |
| Face to Face Flanged " | | 15 1/2 | 16 1/4 | 16 1/2 | 17 | 18 | 19 1/4 | 22 1/2 | 24 | .... |
| Diameter Flanges.... " | | 12 1/2 | 14 | 15 | 16 | 17 1/2 | 20 | 22 1/2 | 25 | .... |

| Size | inches | 18 | 20 | 22 | 24 |
|-----------------------------|--------|--------|----------|----------|----------|
| Flanged with By-pass..... | | 850.00 | 1,150.00 | 1,450.00 | 1,850.00 |
| Diameter Flanges.....inches | | 27 | 29 1/2 | 31 1/2 | 34 |

Template for drilling, same as Extra Heavy Fittings, B416. See index.

*Flanged only 12-inch and larger sizes.

Valves may be packed when wide open.

Angle Gate Valves quoted on application

EXTRA HEAVY IRON BODY, BRASS MOUNTED
GATE VALVES—(CONTINUED)

For 250 Pounds Steam Working Pressure

Diameter of Flanges and Drilling Template, same as Companion Flanges, Extra Heavy; see index.

PRICE EACH

| Size..... | inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 |
|--------------------------------|-----------------------------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| Scott's | Sta. Stem.. | ..... | 35.00 | 40.00 | 45.00 | 50.00 | 60.00 | 65.00 | 80.00 | 100.00 | 120.00 |
| | 0. Scr. & Yoke | ..... | 45.00 | 50.00 | 60.00 | 65.00 | 75.00 | 85.00 | 105.00 | 125.00 | 150.00 |
| | By-pass extra† | ..... | ..... | ..... | ..... | ..... | ..... | 20.00 | 25.00 | 35.00 | ..... |
| Fl'g'd, Face to F..... | in. | 9% | 10½ | 11 | 11½ | 12½ | 13% | 15% | 16½ | 17% | ..... |
| Fairbanks | Sta. Stem.. | 11.25 | 16.15 | 21.00 | 27.35 | 30.75 | 37.50 | 40.50 | 51.00 | 61.50 | 77.25 |
| | 0. Scr. & Yoke | 22.00 | 26.25 | 32.25 | 39.00 | 43.50 | 52.00 | 60.00 | 74.00 | 90.00 | 110.00 |
| | By-pass extra | ..... | ..... | ..... | ..... | ..... | 22.50 | 24.25 | 27.50 | 27.50 | ..... |
| Fl'g'd, Face to F..... | in. | 8% | 9% | 10½ | 11¼ | 12 | 12 | 12½ | 14 | 14½ | 15 |
| Lunk'h'r | Sta. Stem.. | 28.00 | 36.00 | 41.00 | 46.00 | 51.00 | 61.00 | 66.00 | 81.00 | 100.00 | 120.00 |
| | 0. Scr. & Yoke | 36.00 | 46.00 | 51.00 | 61.00 | 66.00 | 76.00 | 86.00 | 110.00 | 130.00 | 150.00 |
| | "Victor" | ..... | ..... | ..... | ..... | ..... | 14.00 | 20.00 | 25.00 | 40.00 | ..... |
| Fl'g'd, Face to F | in. | 6% | 7% | 8½ | 9 | 9% | 10% | 12½ | 13½ | 15 | 16% |
| Empire | Sta. Stem.. | 27.50 | 35.00 | 40.00 | 45.00 | 50.00 | 60.00 | 65.00 | 80.00 | 100.00 | 120.00 |
| | 0 Scr. & Yoke | 35.00 | 45.00 | 50.00 | 60.00 | 65.00 | 75.00 | 85.00 | 105.00 | 125.00 | 150.00 |
| | By-pass extra† | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 35.00 |
| Chapman | Screwed.. | 12.00 | 21.50 | 26.50 | 29.50 | 35.00 | 44.50 | 52.00 | 63.50 | 75.50 | 90.00 |
| | Sta. Stem.. | 13.50 | 22.50 | 28.50 | 31.50 | 37.50 | 46.50 | 54.00 | 66.50 | 81.50 | 96.50 |
| | (List 43) By-pass extra | ..... | ..... | ..... | ..... | ..... | 17.00 | 17.00 | 18.00 | 21.00 | ..... |
| Outside | Screwed .. | 16.00 | 25.00 | 30.50 | 35.50 | 42.50 | 53.00 | 58.00 | 72.00 | 85.00 | 101.00 |
| | Flanged .. | 17.00 | 26.50 | 32.50 | 37.50 | 45.50 | 55.00 | 60.00 | 75.50 | 91.50 | 107.00 |
| | (List 43) By-pass extra | ..... | ..... | ..... | ..... | ..... | 19.50 | 19.50 | 20.25 | 24.00 | ..... |
| Ludlow | Double S'rd. | 11.00 | 15.00 | 19.50 | 21.50 | 24.00 | 33.00 | 38.00 | 49.50 | 59.00 | 69.00 |
| | Gate Fl'g'd | 13.50 | 19.00 | 23.50 | 25.25 | 28.00 | 36.00 | 41.00 | 55.00 | 64.50 | 73.00 |
| | Add for O. Screw and Yoke.. | 8.00 | 10.00 | 10.00 | 18.50 | 18.50 | 19.00 | 19.00 | 21.00 | 24.00 | 28.00 |

| Size | inches | 9 | 10 | 12 | *14 | *15 | *16 | *18 | *20 | *22 | *24 | |
|----------------------------------|------------------------------|---------------|--------|--------|---|--------|--------|--------|--------|--------|--------|--------|
| Scott's Ser. & Flgd. | Sta. Stem.. | 160.00 | 200.00 | 300.00 | 400.00 | ..... | 550.00 | 750.00 | ..... | ..... | ..... |  |
| | 0. Scr. & Yoke | 200.00 | 250.00 | 350.00 | 450.00 | ..... | 600.00 | 800.00 | 1150. | ..... | †1850. | |
| | By-pass extra | 40.00 | 50.00 | 50.00 | 50.00 | ..... | 50.00 | 50.00 | ..... | ..... | 32 | |
| | Fl'g'd, Face to F....in. | 18½ | 19 | 21½ | 22¾ | ..... | 24¼ | 26 | 29 | ..... | ..... |  |
| Fairbanks Ser. & Flgd. | Sta. Stem.. | 95.00 | 109.50 | 150.00 | 200.00 | ..... | 265.00 | 332.00 | 405.00 | ..... | 810.00 | |
| | 0. Scr. & Yoke | 134.00 | 158.00 | 218.00 | 300.00 | ..... | 383.00 | 533.00 | 646.00 | ..... | 1100. | |
| | By-pass extra | 27.50 | 27.50 | 35.50 | 35.50 | ..... | 67.75 | 67.75 | 74.25 | ..... | 103.00 | |
| | Fl'g'd, Face to F....in. | 15½ | 17¼ | 20 | 22 | ..... | 23¼ | 24½ | 26½ | ..... | 31 | |
| Lunk'h'r Ser. & Flgd. | Sta. Stem.. | ..... | 205.00 | 305.00 | 405.00 | 405.00 | 560.00 | ..... | ..... | ..... | ..... |  |
| | 0. Scr. & Yoke | ..... | 255.00 | 355.00 | 455.00 | 455.00 | 610.00 | ..... | ..... | ..... | ..... |  |
| | By-pass extra | ..... | 50.00 | 50.00 | 50.00 | 50.00 | 50.00 | ..... | ..... | ..... | ..... |  |
| | Fl'g'd, Face to F....in. | ..... | 19 | 19¾ | 21¼ | 22½ | 24 | ..... | ..... | ..... | ..... |  |
| Empire Ser. & Flgd. | Sta. Stem.. | 160.00 | 200.00 | 300.00 | 400.00 | 400.00 | 550.00 | ..... | ..... | ..... | ..... |  |
| | 0. Scr. & Yoke | 200.00 | 250.00 | 350.00 | 450.00 | 450.00 | 600.00 | 1850. | 1150. | 1450. | †1850. | |
| | By-pass extra | 40.00 | 50.00 | 50.00 | 50.00 | 50.00 | 50.00 | ..... | ..... | ..... | ..... |  |
| | Ser. & Flgd., F. to F....in. | 17 | 18 | 19¾ | 22½ | 22½ | 24 | 26 | 28 | ..... | 31 | |
| Chapman (List 43) | Sta. Stem.. | 116.00 | 138.00 | 190.00 | 238.00 | 280.00 | 315.00 | 390.00 | 472.00 | 561.00 | 670.00 | |
| | Flanged | 0 Scr. & Yoke | 125.00 | 146.00 | 195.00 | 213.00 | 296.00 | 332.00 | 413.00 | 487.00 | 594.00 | 700.00 |
| | By-pass extra | 25.00 | 26.00 | 32.00 | 34.00 | 36.00 | 70.00 | 73.00 | 96.00 | 99.00 | 101.00 | |
| L'dl'w (Dbl.) | Sta. Stem.. | 95.00 | 110.00 | 148.00 | By-pass, on 6 to 10-in., add \$25.00; 12-in., \$29.00 | ..... | ..... | ..... | ..... | ..... | ..... |  |
| Flanged | Gate \| O.S. and Yoke | 125.00 | 140.00 | 181.00 | Valves are known as Ludlow List No. 5½ | ..... | ..... | ..... | ..... | ..... | ..... |  |

[†]Price with By-pass is for Outside Screw and Yoke Valves; on Stationary Stem Valves price is usually slightly less.

~~See Chapman By-pass Valve, List 43 $\frac{1}{4}$, Chapman Catalogue, about 5% lower price.~~

*Valves larger than 12-inch are made Flanged only, except Scott 14-inch and Empire 14, 15 and 16-inch, which can be furnished Screwed.

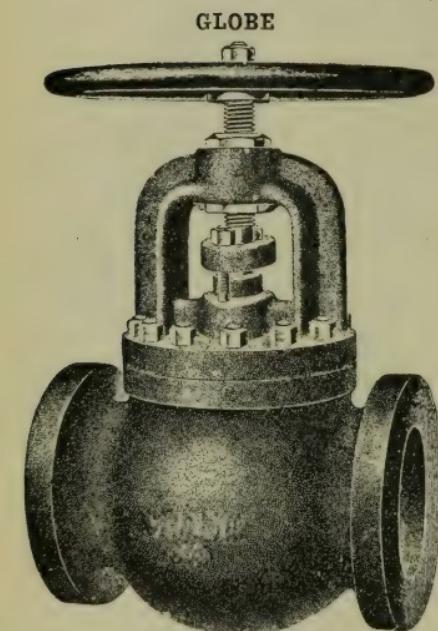
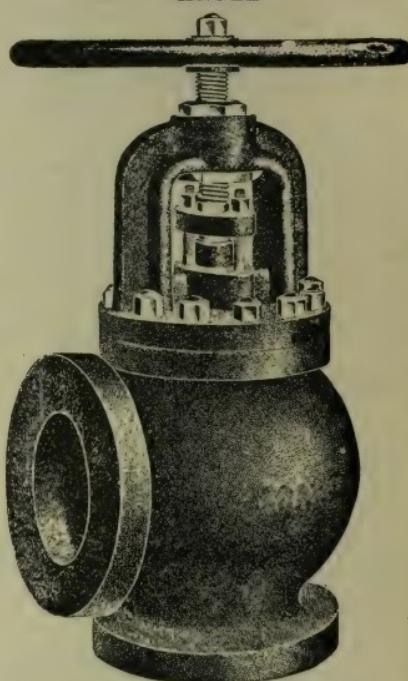
"VICTOR" Valves can be made of Semi-Steel at special price.

EXTRA HEAVY IRON BODY GLOBE ANGLE AND CROSS VALVES

With Yoke. Hard Metal Seats.

Suitable for Steam Working Pressure of 250 Pounds.

ANGLE



B505

B506

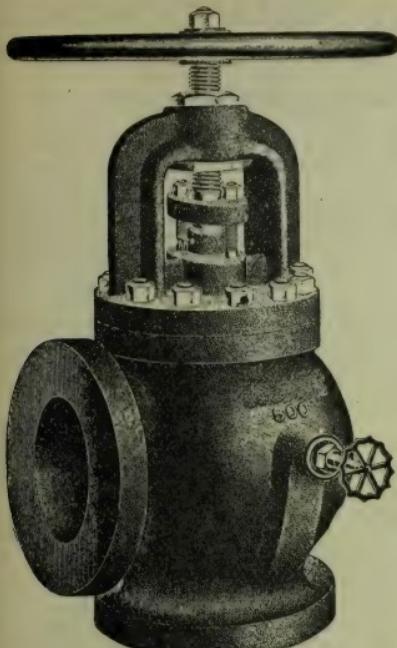
Can be furnished with by-pass if desired.

Price list applies to valves with "High Duty Metal" trimmings and Crane Ferrosteel Valves, also to Scott Valves.

| Size..... Inch | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|
| Globe & } Screwed..each | 26.00 | 33.00 | 37.00 | 42.00 | 46.00 | 56.00 | 61.00 |
| Angle } Flanged.. " | 27.50 | 35.00 | 40.00 | 45.00 | 50.00 | 60.00 | 65.00 |
| Cross } Screwed.. " | 33.00 | 40.00 | 45.00 | 50.00 | 55.00 | 70.00 | 75.00 |
| Valve } Flanged.. " | 35.00 | 43.00 | 50.00 | 55.00 | 60.00 | 75.00 | 80.00 |

| Size..... Inch | 6 | 7 | 8 | 10 | 12 | 14 | 15 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|--------|
| Globe & } Screwed..each | 75.00 | 95.00 | 114.00 | 190.00 | .... | .... | .... |
| Angle } Flanged.. " | 80.00 | 100.00 | 120.00 | 200.00 | 300.00 | 400.00 | 400.00 |
| Cross } Screwed.. " | 95.00 | 120.00 | 145.00 | 240.00 | .... | .... | .... |
| Valve } Flanged.. " | 100.00 | 125.00 | 150.00 | 250.00 | 375.00 | 500.00 | 500.00 |
| By-pass on Flanged Valves Add.... | | | 30.00 | 50.00 | 50.00 | 50.00 | 50.00 |

For Dimensions, see page 103.



B507

"HIGH DUTY METAL" TRIMMED GLOBE AND ANGLE VALVES. Listed Page 102

| Size..... | inches | 2½ | 3 | 4 | 5 | 6 | 7 | 8 | 10 | 12 |
|------------------------------|--------|-----|-----|----|-----|-----|-----|-----|-----|-----|
| Globe Valve { screwed ...in. | | 10½ | 11¾ | 13 | 14¾ | 16½ | 18½ | 20 | 23½ | ... |
| Face to Face { flanged.... " | | 11½ | 12½ | 14 | 15¾ | 17½ | 19½ | 21 | 24½ | 28 |
| Angle Valve { screwed .. " | | 5½ | 5¾ | 6½ | 7¾ | 8¼ | 9½ | 10 | 11½ | ... |
| Center to Face { flanged : " | | 5¾ | 6¼ | 7 | 7¾ | 8¾ | 9½ | 10½ | 12½ | 14 |
| Diameter of Flanges.... " | | 7½ | 8¼ | 10 | 11 | 12½ | 14 | 15 | 17½ | 20 |

Template for Drilling, see B416.

DIMENSIONS CRANE FERROSTEEL VALVES

As listed on page 102.

| Size | inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 to 12 | 14 | 15 |
|--------------------------|--------|-----|-----|-----|-----|----|-----|-----|-----|------------|-----|-----|
| Globe or Cr. } scr...in. | | 9½ | 10¾ | 11¾ | 12½ | 13 | 14 | 15 | 16½ | Same | ... | ... |
| Face to F. } fig.. " | | 10½ | 11½ | 12½ | 13¾ | 14 | 15 | 15¾ | 17½ | Dimensions | 33 | 33 |
| Ang. or Cr. } scr.. " | | 4¾ | 5¾ | 5¾ | 6½ | 6½ | 7 | 7½ | 8½ | Table | ... | ... |
| Center to F. } fig.. " | | 5½ | 5¾ | 6½ | 6½ | 7 | 7½ | 8¾ | 10½ | Above | 16½ | 16½ |
| Diam. of Flgs.... " | | 6½ | 7½ | 8¼ | 9 | 10 | 10½ | 11 | 12½ | 22½ | 23½ | 23½ |

Template for Drilling same as Extra Heavy Flanges. See B416.

SCOTT'S GLOBE AND ANGLE VALVES. Listed Page 102

| Size | inches | 2½ | 3 | 4 | 5 | 6 | 7 | 8 | 10 | 12 |
|-------------------------------|--------|----|----|-----|-----|-----|----|----|-----|-----|
| Globe Valve { screwed ...in. | | 10 | 11 | 12½ | 14¾ | 16 | 17 | 19 | 21½ | ... |
| Face to Face { flanged.... " | | 11 | 12 | 13½ | 15½ | 17 | 18 | 20 | 23 | 25 |
| Angle Valves { screwed .. " | | 5 | 5½ | 6½ | 7½ | 8 | 8½ | 9 | 10½ | ... |
| Center to Face { flanged .. " | | 5½ | 6½ | 6¾ | 7½ | 8½ | 9 | 9½ | 11 | 12½ |
| Diameter of Flanges.... " | | 7½ | 8¼ | 10 | 11 | 12½ | 14 | 15 | 17½ | 20 |

Template for Drilling same as Extra Heavy Flanges. See B416.

**JENKINS BROS.' EXTRA HEAVY IRON BODY GLOBE,
ANGLE, AND CHECK VALVES**

For 250 Pounds Steam Pressure. Iron Body, Brass Mounted

With Steam Metal Discs

| Size.....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
|---------------------------|-------|-------|-------|-------|-------|-------|-----|------|-------|-------|-------|-------|-------|
| Globe and { Scr... | 16.00 | 19.00 | 24.00 | 28.00 | 38.00 | 44. | 53. | 70. | 100. | 110. | 165. | 180. | 230. |
| Angle { Flg... | 18.00 | 21.00 | 26.00 | 30.00 | 40.00 | 46. | 55. | 73. | 100. | 110. | 165. | 180. | 230. |
| With By-Pass, Scr. & Fig. | ..... | ..... | ..... | ..... | ..... | ..... | 80. | 110. | 125. | 145. | ..... | 230. | 300. |
| Check { Scr.... | 15.00 | 17.00 | 21.00 | 26.00 | 34.00 | 38. | 46. | 65. | ..... | ..... | ..... | ..... | ..... |
| Valve { Flg.... | 16.00 | 19.00 | 23.00 | 28.00 | 36.00 | 40. | 48. | 67. | ..... | ..... | ..... | ..... | ..... |
| Globe, End { Scr.. | 7½ | 9 | 10½ | 11½ | 12½ | 14 | 15 | 17 | 18 | 19½ | 21 | 23 | 26 |
| to End { Flg.. | 9 | 10 | 11½ | 12½ | 13½ | 14½ | 15½ | 17 | 18½ | 20 | 21¼ | 23 | 26 |
| Diam. Flg. inches | 6½ | 7½ | 8¼ | 9 | 10 | 10½ | 11 | 12½ | 14 | 15 | 16 | 17½ | 20 |

Angle Valves, center to either opening, just half the end to end measurement of Globe Valve.

**LUNKENHEIMER EXTRA HEAVY IRON BODY
GLOBE, ANGLE; CROSS, AND
CHECK VALVES**

For 250 Pounds Working Pressure. Iron Body, Brass Mounted

| Size.....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 | 10 | 12 |
|---------------------------------------|-------|-------|-------|-----|-----|-----|-----|------|-------|-------|-------|-------|
| Globe or Angle { Screwed. | 29.00 | 33.00 | 37.00 | 42. | 46. | 53. | 61. | 75. | 95. | 114. | 190. | 285. |
| Flanged. | 31.00 | 35.00 | 40.00 | 45. | 50. | 57. | 65. | 80. | 100. | 120. | 200. | 300. |
| Cross Valve { Screwed | 35.00 | 40.00 | 45.00 | 50. | 55. | 63. | 75. | 95. | 120. | 145. | 240. | 350. |
| Check Valve, Hor. { Scr.. | 38.00 | 43.00 | 50.00 | 55. | 60. | 68. | 80. | 100. | 125. | 150. | 250. | 375. |
| Check Valve, Hori. or Angle { Flg.. | 23.00 | 26.50 | 29.50 | 34. | 37. | 43. | 49. | 60. | 76. | 91. | 150. | 200. |
| Horizontal or Angle { Flg.. | 25.00 | 28.00 | 32.00 | 36. | 40. | 46. | 52. | 64. | 80. | 96. | 160. | 240. |
| Swing Check { Screwed ... | 26.00 | 30.00 | 33.00 | 39. | 42. | 48. | 55. | 68. | ..... | ..... | ..... | ..... |
| Flanged. | 28.00 | 32.00 | 36.00 | 41. | 45. | 52. | 60. | 72. | ..... | ..... | ..... | ..... |
| Face to F. Flg. Globe & Hor. Ch...in. | 9½ | 11½ | 12½ | 13½ | 14 | 15 | 15½ | 17½ | 19½ | 21½ | 25% | 28% |
| Cnt'r to F. Flg. Angle & Angle Ch. " | 4½ | 5½ | 6½ | 6½ | 7 | 7½ | 7½ | 8½ | 9½ | 10½ | 12½ | 14 |
| Diameter Flanges....." | 6½ | 7½ | 8½ | 9 | 10 | 10½ | 11 | 12½ | 14 | 15 | 17½ | 20 |

By-pass extra.

Dimensions of Screwed Valves on application

These Lunkenheimer Valves can be furnished of Semi-Steel, the tensile strength of which is over 30,000 pounds. Prices on application.

**FAIRBANKS EXTRA HEAVY GLOBE AND
ANGLE VALVES**

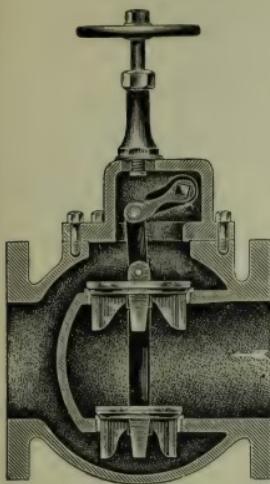
For 250 Pounds Working Pressure. Iron Body, Bronze Mounted

With Renewable Copper Ring Disc

| Size.....inches | 2 | 2½ | 3 | 3½ | 4 | 5 | 6 | 7 | 8 | 10 | 12 |
|----------------------------|-------|-------|--------|-------|-------|-------|-------|--------|--------|--------|--------|
| Screwed..... | 12.50 | 15.00 | 21.00 | 24.50 | 30.00 | 50.00 | 60.00 | 100.00 | 113.00 | 163.00 | 232.00 |
| Flanged..... | 14.70 | 17.50 | 23.25 | 27.00 | 32.50 | 52.50 | 62.50 | 100.00 | 113.00 | 163.00 | 232.00 |
| Face to F. Flg. Globe, in. | 9 | 10 | 10½ | 11½ | 12½ | 14½ | 15½ | 17½ | 18 | 22 | 23½ |
| Cnt'r to F. Flg. Angle " | 4½ | 4½ | 5 1/16 | 5½ | 6 | 7 | 7½ | 8½ | 9½ | 11½ | 11½ |
| Diam. Flg...." | 6½ | 7½ | 8½ | 9 | 10 | 11 | 12½ | 14 | 15 | 17½ | 20 |

Template for drilling same as Extra Heavy Flanges, B416.

By-pass Valves quoted on application



B510—Class A

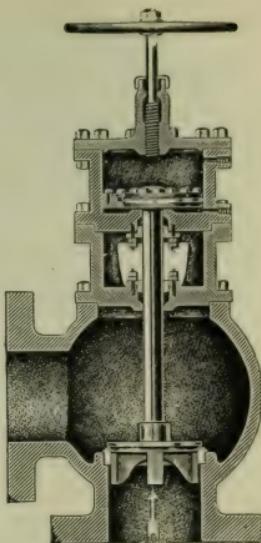
**AUTOMATIC
STOP AND CHECK
VALVES**

Extra Heavy for Working
Pressure up to 250
Pounds

DAVIS

Class A—Globe or Angle

Class B—Angle only

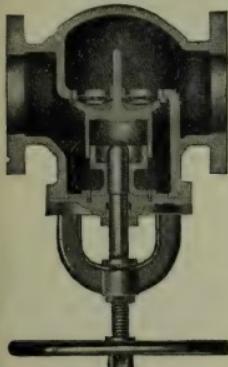


B511—Class B

| Size | inches | 4 | 5 | 6 | 7 | 8 | 10 | 12 |
|--------------------------|--------------|--------|-------|-------|-------|-------|--------|--------|
| Price | each | \$5.00 | 40.00 | 50.00 | 60.00 | 75.00 | 125.00 | 200.00 |
| Diameter of Flanges..... | inches | 10 | 11 | 12½ | 14 | 15 | 17½ | 20 |

Class A, angle or straight, controlled by flow of steam, pressure not affecting its operation. It has a hand lever by which movement of valve may be tested at any time, also acts as indicator.

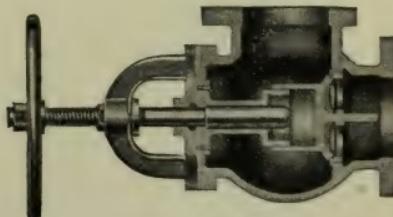
Class B valves, angle only, are to be operated by a pilot valve or a three-way cock, and can be arranged to prevent escape of steam should a break occur at any distance from boiler.



B512

ECLIPSE

Set with Wheel Down or Horizontal

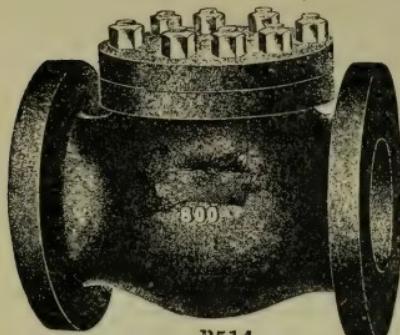


B513

| Size | inches | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
|---------------|--------------|------|----|----|----|----|----|----|-----|-----|-----|-----|-------|
| Screwed | each | \$35 | 40 | 50 | 55 | 65 | 75 | 90 | 115 | 140 | 200 | 230 | ..... |
| Flanged | " | 40 | 45 | 55 | 60 | 70 | 80 | 95 | 120 | 145 | 210 | 240 | 360 |

Diameter flanges same as Davis valves top of page.

Automatic Stop and Check Valves should be placed between boiler and header. They will equalize the pressure between different boilers, remaining closed as long as the individual boiler pressure is lower than that of the header. They will open when boiler pressure equals header pressure and remain open while equal pressure exists. They automatically cut out a boiler in case a tube blows out.



B514

**EXTRA HEAVY IRON BODY
SWING CHECK VALVE**

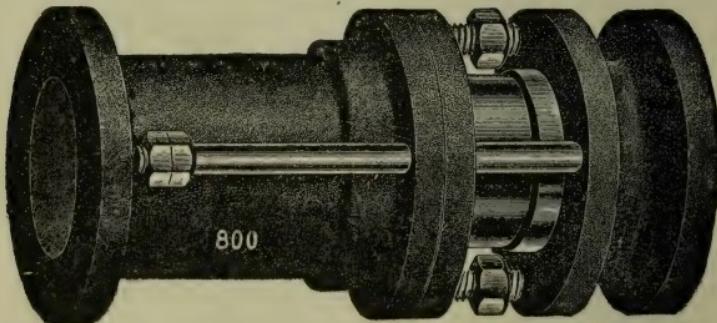
With Hard Metal Seats, Suitable for a Working Pressure of 250 Pounds.

| Size..... | Inches | 2 | 2½ | 3 | 3½ | 4 | 4½ |
|--------------|--------|-------|-------|--------|--------|--------|--------|
| Screwed..... | Each | 26.00 | 33.00 | 37.00 | 42.00 | 46.00 | 56.00 |
| Flanged..... | " | 27.50 | 35.00 | 40.00 | 45.00 | 50.00 | 60.00 |
| Size..... | Inches | 5 | 6 | 7 | 8 | 10 | 12 |
| Screwed..... | Each | 61.00 | 75.00 | 95.00 | 114.00 | 190.00 | ..... |
| Flanged..... | " | 65.00 | 80.00 | 100.00 | 120.00 | 200.00 | 300.00 |

For diameter flanges and drilling, see B416. Larger sizes quoted on application

EXTRA HEAVY EXPANSION JOINTS

Iron body, with Tie Rods, Brass Sleeve, Suitable for a Working Pressure of 250 Pounds



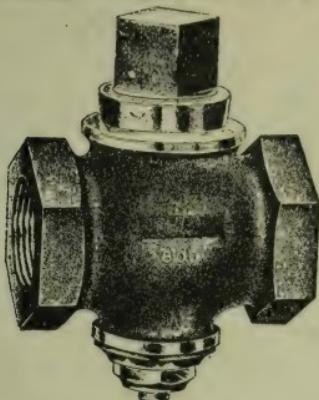
B515

| Size..... | Inches | 4 | 5 | 6 | 7 | 8 | 9 |
|--------------------|---------|--------|--------|--------|--------|--------|----------|
| Screwed..... | Each | 70.00 | 80.00 | 100.00 | 120.00 | 145.00 | 190.00 |
| Flanged..... | " | 75.00 | 85.00 | 105.00 | 125.00 | 150.00 | 200.00 |
| Traverse..... | In. | 3½ | 4 | 5 | 6 | 7 | 7 |
| Diam. Flanges..... | " | 10 | 11 | 12½ | 14 | 15 | 16 |
| Length when open { | Screwed | 18¾ | 21½ | 24¾ | 27¾ | 30¾ | 31¾ |
| | Flanged | 19¾ | 22¾ | 25¾ | 28¾ | 31¼ | 31¾ |
| Size..... | Inches | 10 | 12 | 14 | 15 | 16 | 18 |
| Screwed..... | Each | 240.00 | 290.00 | ..... | ..... | ..... | ..... |
| Flanged..... | " | 250.00 | 300.00 | 500.00 | 500.00 | 750.00 | 1,000.00 |
| Traverse..... | In. | 7 | 8 | 10 | 10 | 10 | 10 |
| Diam. Flange..... | " | 17½ | 20 | 22½ | 23½ | 25 | ..... |
| Length when open { | Screwed | 32¾ | ..... | ..... | ..... | ..... | ..... |
| | Flanged | 33⅓ | 37⅓ | 42 | 42⅓ | 45 | ..... |

These Expansion Joints can be made with longer traverse than above at a special price. Can be furnished with Iron Sleeves and Brass Bearings at special price. Balanced Extra Heavy Expansion Joints quoted on application.

EXTRA HEAVY BRASS STEAM COCK

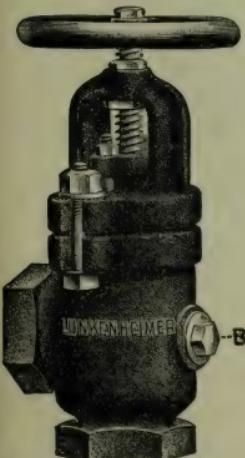
For Working Pressure up to 300 Pounds



B516

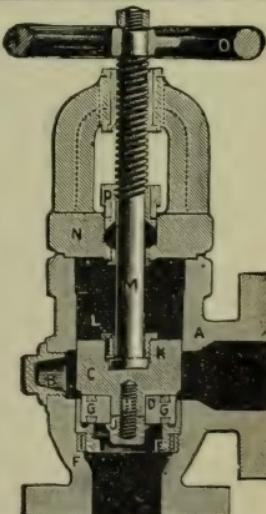
SQUARE HEAD, FLAT HEAD, OR T-HANDLE

| Size | inches | $\frac{1}{8}$ or $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ |
|---------------|--------------|--------------------------------|---------------|----------------|---------------|----------------|----------------|
| Screwed | each | 1.30 | 1.50 | 2.00 | 2.85 | 4.00 | 6.75 |
| Flanged. | " | | | 6.50 | 7.75 | 10.00 | 14.25 |
| Size..... | inches | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 |
| Screwed | each | 8.50 | 13.50 | 25.00 | 37.00 | 54.00 | 75.00 |
| Flanged. | " | 17.25 | 27.00 | 41.00 | 63.00 | 84.00 | 120.00 |

"DURO" BLOW-OFF VALVE
Iron Body

For High Pressure

B517

**SCREWED AND
FLANGED**

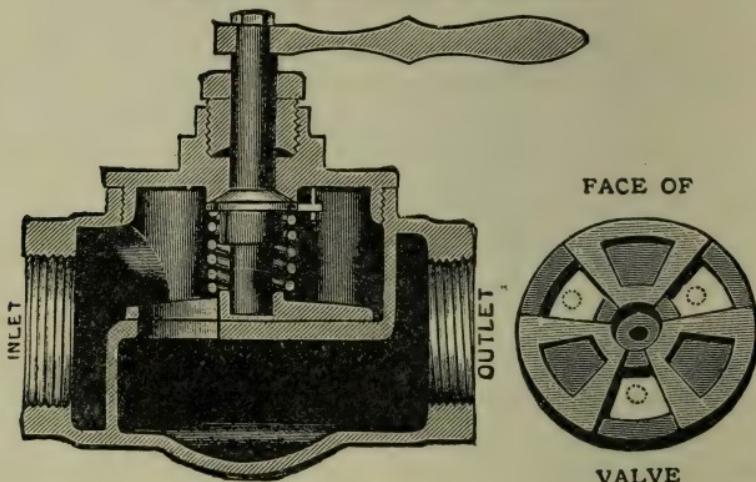
| Size..... | inches | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|-----------------------|--------------|----------------|----------------|----------------|----------------|----------------|
| Screwed | each | 7.50 | 10.00 | 13.50 | 18.20 | 27.50 |
| Flanged. | " | 8.70 | 11.20 | 15.00 | 20.00 | 30.00 |
| Diameter Flanges..... | inches | 5 | 6 | $6\frac{1}{2}$ | $7\frac{1}{2}$ | $8\frac{1}{4}$ |

Can be furnished Screwed one opening and Flanged other opening. See also Blow Off Valve, B658, etc., which can be furnished Extra Heavy, Screwed or Flanged with Extra Heavy diameter flanges. List price same as Standard. See Homestead Valves, B681. See Asbestos Packed Cocks, B675.

**GOLDSMITH PATENT VALVES
STRAIGHT AND ANGLE**

FOR THROTTLE, MAIN STOP VALVES, ETC.

Quick and Easy Opening and Closing



B518

STRAIGHT OR ANGLE PATTERN FOR HIGH PRESSURE

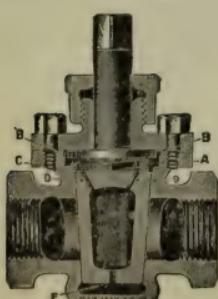
| Size..... | Inch | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 |
|---------------------|-----------|------|------|-------|-------|-------|-------|-------|
| Brass, with | Screwed | | | | | 25.00 | 35.00 | 50.00 |
| Auxiliary | { Flanged | | | | | 32.50 | 46.00 | 61.00 |
| Without | { Screwed | 4.00 | 6.00 | 8.00 | 10.00 | 16.00 | 26.00 | 41.00 |
| Auxiliary | { Flanged | | | | | 22.50 | 36.00 | 51.00 |
| Iron Body | Screwed | | | | | 15.00 | 22.00 | 3 .00 |
| With Auxiliary | { Flanged | | | | | 16.00 | 23.00 | 32.00 |
| Diameter of Flanges | | | | | | 6 1/2 | 7 1/2 | 8 1/4 |

| Size..... | Inch | 4 | 5 | 6 | 7 | | | |
|---------------------|-----------|-------|-------|--------|--------|--|--|--|
| Iron Body | Screwed | 45.00 | 75.00 | 100.00 | 130.00 | | | |
| With Auxiliary | { Flanged | 47.00 | 78.00 | 105.00 | 135.00 | | | |
| Diameter of Flanges | | 10 | 11 | 12 1/2 | 14 | | | |

The Goldsmith Throttle Valves are especially adapted for stationary and marine engines and large steam pumps, and can be made to work automatically and otherwise, the pressure being on top of the disc or valve, holds the valve more closely to its seat, yet the valve opens and closes easily and quickly.

The first movement of the lever moves the auxiliary valve, uncovering ports in the main valve, making about an equal pressure above and below the main valve, thereby causing the main valve, in its movements, to act as a balanced valve.

In piping always have the pressure on top of valve. On the main steam pipe a lubricator should be placed near and between the Goldsmith and the boiler, to lubricate the face of the discs and seats of the valve.



B519

HOMESTEAD VALVES

B519

For High Pressures, see page 109.
For ordinary Pressure, see B681.
See B681 for description.

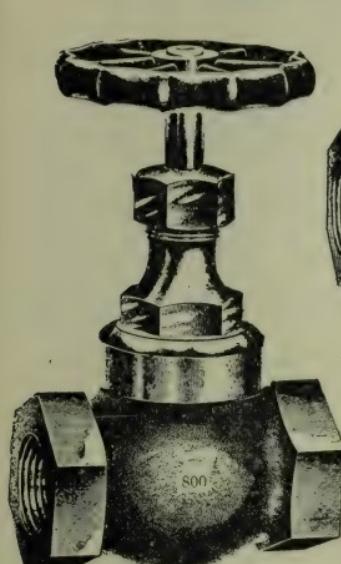
EXTRA HEAVY BRASS VALVES

Tested to 800 Pounds. Suitable for 250 Pounds Working Pressure

GLOBE VALVE

CHECK VALVE B532

GATE VALVE



B530

HOMESTEAD VALVE B533

B531

| Size | inches | 1/2 | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 |
|--|--------|------|-------|-------|-------|-------|-------|-------|------|
| Globe, Angle { Scr. and Gate Valve { Flg. | 3.75 | 4.25 | 5.50 | 7.75 | 10.00 | 15.00 | 27.50 | 38.50 | |
| .... .... | .... | .... | 11.00 | 15.00 | 21.00 | 28.00 | 45.00 | 68.00 | |
| Swing Check Valve, Screwed | 3.25 | 3.25 | 4.25 | 6.00 | 7.50 | 12.00 | .... | .... | .... |
| Diam. of Flgs....in. | .... | .... | 4 1/2 | 5 | 6 | 6 1/2 | 7 1/2 | 8 1/4 | |

These valves are regularly made with copper discs, but they can be furnished with discs of special composition, or with other discs, as desired.

HOMESTEAD BRASS VALVES — B533

| Size..... | inches | 1/8 | 1/4 | 3/8 | 1/2 | 3/4 | 1 |
|------------------------------------|--------|-------|-------|-------|--------|--------|--------|
| For 500 Pounds Pressure | | 1.25 | 1.50 | 2.00 | 3.00 | 4.50 | 6.15 |
| " 1500 " " | | 1.75 | 3.00 | 5.00 | 7.35 | 10.20 | 16.29 |
| Flanged, 500 Pounds Pressure | | | | | | | 7.95 |
| " 1500 " " | | | | | | | 22.00 |
| 3-Way, 600 " " Ser.. | | | | 4.00 | 5.10 | 8.55 | 11.40 |
| *4-Way, 600 " " .. | | | | | 9.45 | 11.82 | 21.20 |
| Diameter of Flanges.....inches | | | | | | 4 | 4 1/2 |
| Size..... | inches | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 4 |
| For 500 Pounds Pressure..... | | 7.80 | 10.50 | 15.00 | 30.00 | 48.00 | 75.00 |
| " 1500 " " | | 21.30 | 29.85 | 48.00 | 77.00 | 122.00 | 141.00 |
| Flanged, 500 Pounds Pressure | | 10.05 | 13.65 | 20.00 | 39.00 | 63.00 | 94.00 |
| " 1500 " " | | 28.00 | 39.00 | 63.00 | 100.00 | 159.00 | 177.00 |
| 3-Way, 600 " " Ser.. | | 14.70 | 16.95 | 23.00 | 34.00 | 57.00 | 120.00 |
| *4-Way, 600 " " .. | | 24.00 | 30.40 | 42.75 | 57.45 | 85.00 | .... |
| Diameter of Flanges.....inches | | 5 | 6 | 7 | 7 1/2 | .... | .... |

See B681 for Homestead Iron Valves for lower pressure.

Larger sizes quoted on application. Heavier Valves quoted on application.

* 4-Way Valves are made All Iron, All Brass, or Iron with Brass Plug.

JENKINS BROS.' EXTRA HEAVY BRASS VALVES
B534

Suitable for Steam Working Pressure of 250 Pounds
 For Water or Air up to 500 Pounds

When ordering always mention kind of service to be used for so that suitable discs may be furnished.

| Size..... |inches | 1/2 | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 |
|--------------------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Globe or Angle { | Screwed | 4.00 | 5.00 | 6.50 | 8.25 | 11.00 | 16.00 | 33.00 | 45.00 |
| | Flanged | 6.00 | 7.50 | 10.00 | 13.00 | 17.00 | 24.00 | 43.00 | 57.00 |
| Check Valves { | Screwed... | 3.00 | 3.50 | 4.50 | 6.00 | 7.50 | 11.50 | 24.00 | 34.00 |
| Horizontal and Angle { | Flanged... | 5.00 | 6.50 | 8.50 | 11.00 | 14.00 | 20.00 | 34.00 | 46.00 |
| Y Blow Off Valve { | Screwed | 4.50 | 6.00 | 8.00 | 10.00 | 13.00 | 19.00 | 36.00 | 46.00 |
| | Flanged | 6.50 | 8.00 | 11.00 | 14.00 | 18.00 | 28.00 | 50.00 | 60.00 |
| Diameter of Flanges..... | inches | 3 1/4 | 3 3/4 | 4 1/2 | 5 | 5 1/2 | 6 1/2 | 7 1/2 | 8 1/4 |

Extra Discs see page 120.

LUNKENHEIMER EXTRA HEAVY BRASS VALVES
B535

Suitable for 300 Pounds Working Pressure:

| Size..... |inches | 1/4 | 3/8 | 1/2 | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 |
|---------------------|-------------|-------|------|-------|------|-------|-------|-------|-------|-------|-------|
| Globe and { | Scr.... | .90 | 1.10 | 1.50 | 2.30 | 3.60 | 5.10 | 7.10 | 10.90 | 19.50 | 29.00 |
| Angle Valves { | Flg... | ..... | 2.50 | 4.10 | 5.80 | 7.60 | 11.00 | 14.00 | 20.00 | 32.00 | 44.00 |
| Cross Valve { | Scr | 1.20 | 1.30 | 1.90 | 2.90 | 4.50 | 6.30 | 8.60 | 13.10 | 23.40 | 34.50 |
| | Flg .... | ..... | 3.50 | 5.90 | 8.20 | 10.50 | 14.50 | 19.00 | 27.00 | 43.00 | 57.00 |
| Gate Valve { | Scr..... | 1.90 | 1.90 | 2.20 | 3.10 | 4.40 | 6.00 | 8.90 | 12.80 | 21.00 | 34.00 |
| | Flg..... | ..... | 3.50 | 4.20 | 5.50 | 7.50 | 10.50 | 14.50 | 19.40 | 29.00 | 44.00 |
| Check Valve { | Scr.... | .70 | .70 | 1.00 | 1.70 | 2.80 | 3.90 | 5.50 | 8.90 | 16.20 | 24.30 |
| Hor., Ang., Vert. { | Flg.... | ..... | 2.20 | 3.70 | 5.20 | 6.80 | 9.40 | 12.70 | 18.10 | 29.00 | 39.10 |
| Swing Check { | Scr .. | 2.00 | 2.10 | 2.20 | 2.90 | 4.00 | 5.60 | 7.50 | 11.00 | 18.30 | 28.30 |
| | Flg .. | ..... | 3.40 | 4.00 | 4.90 | 6.60 | 9.50 | 12.50 | 16.80 | 25.30 | 37.00 |
| Diam. Flanges..... | inches | 2 1/2 | 3 | 3 1/2 | 4 | 4 1/2 | 5 | 6 | 7 | 7 1/2 | 8 1/4 |

Larger sizes on application.

Can furnish Globe, Angle, and Cross Valves with Yoke, at special prices.

SCOTT'S EXTRA HEAVY BRONZE METAL VALVES
B536

With Copper, Bronze, Jenkins, or Regrinding Discs

| Size..... |inches | 1/2 | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 |
|-----------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|---|
| Globe, Angle, and Gate, Screwed.. | 3.75 | 4.25 | 5.50 | 7.75 | 10.00 | 15.00 | 27.50 | 38.50 | |
| " " " Flanged.. | ..... | 12.00 | 15.00 | 18.00 | 24.00 | 30.00 | 50.00 | 60.00 | |
| Swing Check Valve, Screwed..... | 3.25 | 3.25 | 4.25 | 6.00 | 7.50 | 12.00 | ..... | ..... |  |
| " " " Flanged..... | ..... | ..... | 12.00 | 15.00 | 18.00 | 27.00 | 45.00 | 60.00 | |
| Diameter of Flanges..... | inches | 4 1/2 | 5 | 6 | 6 1/2 | 7 1/2 | 8 1/4 | | |

CHAPMAN EXTRA HEAVY BRONZE GATE VALVES

B537

With Solid Bronze Seats. (Chapman List No. 11.) For 250 Pounds Working Pressure

| Size..... |inches | 1/4-3/4 | 1/2 | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 |
|----------------------|--------------|---------|------|------|-------|-------|-------|-------|-------|-------|
| Stationary { | Screwed..... | 3.50 | 3.85 | 5.20 | 6.35 | 8.00 | 10.30 | 15.20 | 22.75 | 32.50 |
| | Flanged..... | 4.35 | 5.10 | 6.50 | 8.70 | 10.80 | 13.85 | 20.50 | 31.00 | 39.50 |
| Outside Screw { | Screwed.... | 5.00 | 5.50 | 6.85 | 8.25 | 9.85 | 12.85 | 17.85 | 26.00 | 37.50 |
| | Flanged.... | 5.90 | 6.65 | 8.25 | 10.50 | 12.75 | 16.50 | 23.25 | 34.00 | 44.50 |
| Diam. of Flanges ... | inches | 2 1/2 | 3 | 3 | 4 | 4 1/2 | 5 | 6 | 7 | 7 |

Can also be furnished Angle pattern, at special price.

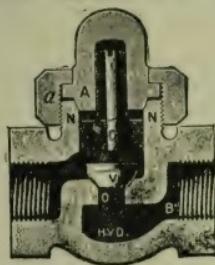
These Chapman Valves can also be furnished with Babbitt Metal seats, for water, air, etc., but should not be used for steam above 325 degrees (80 pounds); for higher temperatures use the solid bronze seats.

HYDRAULIC VALVES

Tested to 2000 Pounds. For Working Pressure of 800 Pounds
GLOBE VALVE B540—**CHECK VALVE** GATE VALVE

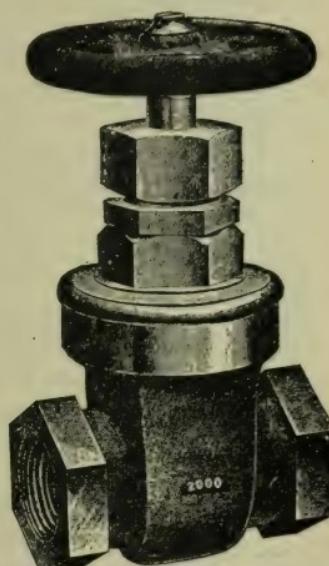


B538



B541—HOMESTEAD VALVE

See page 109.



B539

BRASS VALVES

Tested to 2000 Pounds, for Working Pressure of 800 Pounds

| Size..... | ...inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|---------------------------------|-----------|---------------|---------------|---------------|-------|----------------|----------------|-------|
| Gate Valve, Screwed..... | ..... | 7.50 | 8.50 | 11.00 | 15.50 | ..... | ..... | ..... |
| Globe " " | 7.00 | 7.00 | 7.00 | 9.00 | 13.00 | 20.00 | 30.00 | ..... |
| Check " Hor. Scr..... | 6.00 | 6.00 | 6.00 | 8.00 | 11.00 | 17.00 | 25.00 | ..... |

These Brass Valves are specified, tested to 2000 pounds, but have often been subjected to as high as 5000 pounds without leaking.

When valves are wanted for a higher working pressure than 800 pounds, or larger sizes, please state at what working pressure they are to be used.

Prices on application.

IRON BODY, BRASS MOUNTED VALVES.—Screwed and Flanged

Tested to 2000 Pounds, for Working Pressure of 800 Pounds

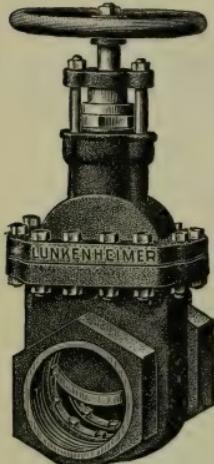
| Size..... | ...inches | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | 4 | 5 |
|---|----------------|----------------|----------------|----------------|-----------------|-----------------|-------|
| Gate, Stationary Stem | 16.00 | 19.00 | 35.00 | 50.00 | 70.00 | 95.00 | ..... |
| Do., with Outside Screw and Yoke.. | 24.00 | 27.00 | 45.00 | 60.00 | 80.00 | 110.00 | ..... |
| Swing Check..... | ..... | ..... | 30.00 | 40.00 | 55.00 | 75.00 | ..... |
| Diameter of Flanges..... | $6\frac{1}{2}$ | $7\frac{1}{2}$ | $8\frac{3}{4}$ | 10 | $11\frac{1}{2}$ | $13\frac{1}{4}$ | ..... |

| Size..... | ...inches | 6 | 7 | 8 | 9 | 10 | ..... |
|---|-----------|--------|--------|-----------------|--------|-------|-------|
| Gate, Stationary Stem..... | 150.00 | 175.00 | 200.00 | 250.00 | 300.00 | ..... | ..... |
| Do., with Outside Screw and Yoke.. | 170.00 | 200.00 | 225.00 | 275.00 | 325.00 | ..... | ..... |
| Swing Check..... | 110.00 | 150.00 | 190.00 | ..... | 240.00 | ..... | ..... |
| Diameter of Flanges | 15 | 16 | 17 | $18\frac{1}{2}$ | 21 | ..... | ..... |

Flanged Gate Valves 6 to 12-inch with **By-pass** quoted on application.

These valves are specified, tested to 2000 pounds, but they have often been subjected to as high as 5000 pounds.

**STATIONARY STEM
SCREWED**

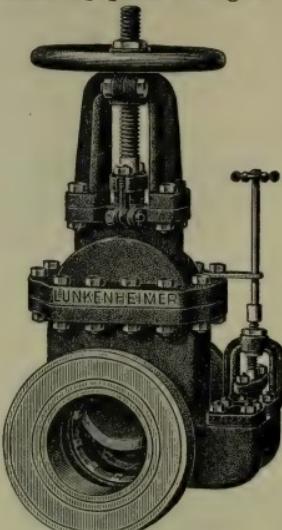


B542

**SPECIAL
IRON BODY,
BRASS MOUNTED
GATE VALVE**

With Flange Diameter same
as Extra Heavy Fittings

**OUTSIDE SCREW AND YOKE
With By-pass Flanged**



B543

**SPECIAL LUNKENHEIMER HEAVY VICTOR VALVES
For 150 Pounds Working Pressure**

| Size... inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | .5 | 6 | 7 | 8 | 10 | 12 |
|------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| Sta'ry { ... Sc. | 9.00 | 11.00 | 14.00 | 22.00 | 29.00 | 34.00 | 42.00 | 53.00 | 60.00 | 75.00 | 115.00 | 170.00 |
| Stem { ... Fl. | 11.70 | 14.00 | 17.50 | 26.00 | 33.00 | 39.00 | 47.50 | 60.00 | 68.00 | 83.00 | 125.00 | 185.00 |
| Outs. Sc. { Sc. | 12.00 | 15.00 | 19.00 | 30.00 | 38.00 | 45.00 | 53.00 | 66.00 | 75.00 | 94.00 | 142.00 | 210.00 |
| and Yoke { Fl. | 15.00 | 18.00 | 22.50 | 34.00 | 42.00 | 50.00 | 59.00 | 73.00 | 83.00 | 105.00 | 155.00 | 225.00 |
| Add for By-pass. | | | | | | | 5.00 | 6.00 | 6.00 | 8.00 | 12.00 | 17.00 |
| Face to F. Fl. | 6% | 7% | 8½ | 8% | 9 | 9% | 10% | 10% | 12% | 13½ | 15% | 16½ |
| Diam. Fl. g's. | 6% | 7% | 8½ | 9 | 10 | 10% | 11 | 12½ | 14 | 15 | 17½ | 20 |

Also made 9-inch Screwed and Flanged, also Flanged only 14, 15, and 16 inch.
Template for Drilling same as Companion Flanges, Extra Heavy, see index.

SPECIAL MEDIUM STRAIGHT-WAY GATE VALVES

Iron Body, with Duro-Metal Trimmings, for 150 Pounds Working Pressure.
Also Crane Ferrosteel with Hard Metal Seats for 175 Pounds
Working Pressure

Screwed and Flanged.

| Size..... | inches | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 |
|-----------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|
| Stationary Stem..... | | 12.00 | 15.00 | 18.00 | 20.00 | 23.00 | 25.00 | 30.00 |
| Outside Screw and Yoke..... | | 20.00 | 23.00 | 28.00 | 33.00 | 40.00 | 46.00 | 55.00 |
| Add for By-pass..... | | | | | | | | 25.00 |
| Face to Face Flanged..... | | 8 | 9½ | 10 | 10½ | 11 | 11½ | 12 |
| Diameter Flanges..... | | 7½ | 8½ | 9 | 10 | 10½ | 11 | 12½ |

| Size..... | inches | 7 | 8 | 9 | 10 | 12 | 14-15 | 16 |
|-----------------------------|--------------|-------|-------|--------|--------|--------|---------|--------|
| Stationary Stem..... | | 45.00 | 55.00 | 80.00 | 90.00 | 125.00 | 190.00 | 275.00 |
| Outside Screw and Yoke..... | | 70.00 | 90.00 | 115.00 | 135.00 | 170.00 | 240.00 | 350.00 |
| Add for By-pass..... | | 30.00 | 35.00 | 35.00 | 35.00 | 40.00 | 50.00 | 50.00 |
| Face to Face Flanged..... | | 12½ | 13½ | 14 | 15 | 16 | 17 | 18 |
| Diameter Flanges..... | | 14 | 15 | 16 | 17½ | 20 | 22½-23½ | 25 |

Also made 18-inch, 20-inch, 22-inch, and 24-inch Flanged with By-pass.
Drilling Template same as Companion Flanges, Extra Heavy, see index.

MEDIUM IRON BODY, BRONZE MOUNTED GATES CHAPMAN

Extra Heavy Diameter Flanges, for 150 Pounds Working Steam Pressure
Stationary Stem or Outside Screw. (List 42 $\frac{1}{4}$.) Renewable Bronze Seats

| Size.....inches | 2 $\frac{1}{2}$ | 3 | 3 $\frac{1}{2}$ | 4 | 4 $\frac{1}{2}$ | 5 | 6 |
|-----------------------------|-----------------|-------|-----------------|-------|-----------------|-------|-------|
| Stationary \| Screwed..... | 16.50 | 20.00 | 24.25 | 30.50 | 40.00 | 41.00 | 50.00 |
| Stem \| Flanged..... | 17.50 | 22.00 | 26.50 | 33.00 | 43.00 | 45.00 | 55.00 |
| Outside Screw \| Screwed.... | 21.50 | 24.50 | 30.25 | 37.00 | 46.50 | 48.00 | 57.00 |
| and Yoke \| Flanged.... | 22.50 | 26.50 | 32.00 | 40.00 | 50.00 | 51.00 | 62.00 |

| Size.....inches | 7 | 8 | 9 | 10 | 12 | 14 | 15 |
|-----------------------------|-------|-------|--------|--------|--------|--------|--------|
| Stationary \| Screwed..... | 60.00 | 72.00 | 86.50 | 105.00 | 148.00 | ..... | ..... |
| Stem \| Flanged..... | 65.00 | 79.00 | 94.00 | 112.00 | 150.00 | 193.00 | 230.00 |
| Outside Screw \| Screwed.... | 68.00 | 79.50 | 94.50 | 114.00 | 154.00 | ..... | ..... |
| and Yoke \| Flanged.... | 73.00 | 86.50 | 102.00 | 122.00 | 157.00 | 198.00 | 245.00 |

Can furnish with **By-pass** at extra price.
Diameter Flanges and Drilling Template, see "Companion Flanges, Extra Heavy," index.

FAIRBANKS HEAVY IRON BODY GATE VALVES

Screwed or Flanged for 150 Pounds Steam Working Pressure

| Size.....inches | 2 | 2 $\frac{1}{2}$ | 3 | 3 $\frac{1}{2}$ | 4 | 4 $\frac{1}{2}$ | 5 |
|-----------------------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|-------|
| Stationary Stem..... | 10.00 | 14.25 | 18.75 | 24.00 | 27.25 | 33.00 | 35.75 |
| Outside Screw and Yoke.... | 21.00 | 25.25 | 30.00 | 36.75 | 40.75 | 48.50 | 57.00 |
| Face to Face, Flanged..ins. | 7 $\frac{1}{2}$ | 8 $\frac{1}{2}$ | 9 | 10 | 10 $\frac{1}{2}$ | 10 $\frac{1}{2}$ | 11 |
| Diameter Flanges..... " | 6 $\frac{1}{2}$ | 7 $\frac{1}{2}$ | 8 $\frac{1}{4}$ | 9 | 10 | 10 $\frac{1}{2}$ | 11 |

| Size.....inches | 6 | 7 | 8 | 9 | 10 | 12 | ..... |
|-----------------------------|------------------|------------------|------------------|--------|------------------|--------|-------|
| Stationary Stem..... | 45.75 | 54.50 | 68.75 | 85.00 | 97.50 | 132.00 | ..... |
| Outside Screw and Yoke.... | 69.00 | 80.00 | 100.00 | 117.00 | 136.00 | 194.00 | ..... |
| Face to Face, Flanged..ins. | 11 $\frac{1}{2}$ | 12 $\frac{1}{2}$ | 13 $\frac{1}{2}$ | 15 | 16 | 17 | ..... |
| Diameter Flanges" | 12 $\frac{1}{2}$ | 14 | 15 | 16 | 17 $\frac{1}{2}$ | 20 | ..... |

Can be furnished with **By-pass** at extra price.

Also made Flanged 14, 16, 18, 20, and 24 inch.

Template for Drilling same as "Companion Flanges Extra Heavy," see index.

SCOTT HEAVY CORLISS GATE VALVES

Screwed or Flanged for 150 Pounds Working Pressure

| Size.....inches | 2 $\frac{1}{2}$ | 3 | 3 $\frac{1}{2}$ | 4 | 4 $\frac{1}{2}$ | 5 | 6 |
|-----------------------------|-----------------|-----------------|-----------------|-----------------|------------------|-------|------------------|
| Stationary Stem..... | 23.00 | 27.00 | 31.00 | 35.00 | 41.00 | 45.00 | 55.00 |
| Outside Screw and Yoke.... | 31.00 | 35.00 | 41.00 | 48.00 | 58.00 | 66.00 | 80.00 |
| Face to Face, Flanged..ins. | 7 $\frac{1}{2}$ | 8 $\frac{1}{8}$ | 9 $\frac{1}{8}$ | 9 $\frac{1}{8}$ | 10 $\frac{1}{2}$ | 11 | 12 |
| Diameter Flanges..... " | 7 $\frac{1}{2}$ | 8 $\frac{1}{4}$ | 9 | 10 | 10 $\frac{1}{2}$ | 11 | 12 $\frac{1}{4}$ |

| Size.....inches | 7 | 8 | 9 | 10 | 12 | 14 | 16 |
|-----------------------------|------------------|--------|--------|------------------|------------------|------------------|--------|
| Stationary Stem..... | 72.00 | 87.00 | 120.00 | 145.00 | 200.00 | 300.00 | 400.00 |
| Outside Screw and Yoke.... | 97.00 | 122.00 | 155.00 | 190.00 | 250.00 | 350.00 | 450.00 |
| Add for By-pass | 35.00 | 35.00 | 40.00 | 50.00 | 50.00 | 50.00 | 50.00 |
| Face to Face, Flanged..ins. | 13 $\frac{1}{2}$ | 15 | 16 | 16 $\frac{1}{2}$ | 17 $\frac{1}{4}$ | 18 $\frac{1}{2}$ | 20 |
| Diameter Flanges..... " | 14 | 15 | 16 | 17 $\frac{1}{2}$ | 20 | 22 $\frac{1}{2}$ | 25 |

Drilling Template same as "Companion Flanges, Extra Heavy," see index.

LUDLOW (LIST NO. 5 $\frac{1}{4}$) DOUBLE GATE

Bronze Mounted for 150 Pounds Steam Working Pressure

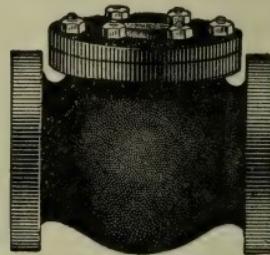
| Size.....inches | 2 | 2 $\frac{1}{2}$ | 3 | 3 $\frac{1}{2}$ | 4 | 4 $\frac{1}{2}$ | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
|--------------------------------|------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|------------------|----|------|------|------------------|
| Screwed | 9.00 | 14 | 16 | 18 | 21 | .... | 29.50 | 37.00 | .... | 54 | .... | .... | ... |
| Flanged | 9.00 | 15 | 17 | 19 | 22 | 26 | 30.00 | 37.50 | 43.50 | 54 | 70 | 81 | 101 |
| O. Sc. & Yoke. Add ..... | .... | 9 | 10 | 10 | 11 | 12 | 12.00 | 14.00 | 16.00 | 18 | 20 | 23 | 28 |
| Flanged F. to F. (not By-pass) | .... | 8 | 8 $\frac{1}{4}$ | 8 $\frac{3}{4}$ | 9 $\frac{3}{4}$ | 10 $\frac{3}{4}$ | 11 $\frac{1}{8}$ | 11 $\frac{1}{4}$ | 13 $\frac{1}{4}$ | 13 | 15 | 15 | 15 $\frac{1}{2}$ |
| Diam. Flanges..... | .... | 7 $\frac{1}{2}$ | 8 $\frac{1}{2}$ | 9 | 9 $\frac{1}{4}$ | 10 | 11 | 12 $\frac{1}{2}$ | 13 $\frac{1}{2}$ | 15 | 16 | 19 | 19 |

SPECIAL IRON BODY GLOBE, ANGLE, CROSS, AND CHECK VALVES

For 150 Pounds Steam Working Pressure



B546

Check Valve
Horizontal or Angle

B547

With Extra Heavy Diameter Flanges and Drilling, see Companion Flanges, Index.

SPECIAL LUNKENHEIMER HEAVY VALVES

| Size.....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 | 10 | 12 |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|----|-----|------|------|
| Globe or { Sc..... | 7.00 | 9.00 | 12.50 | 15.25 | 19.00 | 24.00 | 27.00 | 37.50 | 63 | 72 | 114 | 170. |
| Angle { Fl..... | 11.00 | 13.50 | 18.00 | 22.00 | 26.00 | 32.00 | 36.00 | 48.00 | 75 | 85 | 130 | 200. |
| Cross { Sc..... | 8.50 | 11.75 | 16.25 | 20.00 | 23.50 | 30.65 | 35.25 | 47.25 | 78 | 92 | 162 | 240. |
| Valve { Fl..... | 14.50 | 18.50 | 24.50 | 30.00 | 34.00 | 42.00 | 48.00 | 63.00 | 95 | 110 | 190. | 280. |
| Check { Sc..... | 3.60 | 6.50 | 8.90 | 12.25 | 14.25 | 19.00 | 22.00 | 30.00 | 45 | 57 | 105 | 155. |
| Valve { Fl..... | 7.50 | 11.00 | 17.00 | 19.00 | 21.50 | 26.50 | 31.00 | 41.00 | 57 | 69 | 130 | 190. |
| Swing { Sc..... | 6.25 | 10.00 | 12.00 | 16.00 | 18.00 | 21.00 | 25.00 | 32.00 | 41 | 50 | .... | .... |
| Check { Fl..... | 11.00 | 15.50 | 18.00 | 23.00 | 25.50 | 29.50 | 35.00 | 44.00 | 54 | 64 | .... | .... |

SPECIAL CRANE'S MEDIUM VALVES—B549

| Size.....inches | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 | 10 | 12 |
|--------------------------|-------|-------|-------|-------|-------|-------|-------|-----|-----|-----|------|
| Globe or { Screwed..... | 16.00 | 20.00 | 24.00 | 28.00 | 35.00 | 42.00 | 50.00 | 80 | 90 | 135 | 190. |
| Angle { Flanged..... | 18.00 | 23.00 | 28.00 | 33.00 | 40.00 | 47.00 | 55.00 | 85 | 95 | 145 | 200. |
| Cross { Screwed..... | 22.00 | 27.00 | 32.00 | 37.00 | 45.00 | 54.00 | 65.00 | 100 | 115 | 185 | 260. |
| Valve { Flanged..... | 25.00 | 31.00 | 37.00 | 43.00 | 52.00 | 60.00 | 72.00 | 107 | 122 | 195 | 275. |
| Add for By-pass..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 30 | 50 | 50 | 50. |
| Globe, Face to Face | 10 | 11 | 12 | 13 | 13½ | 14½ | 16 | 17½ | 20 | 22½ | 25½ |
| Angle, Center " | 5 | 5½ | 6 | 6½ | 6¾ | 7¼ | 8 | 8¾ | 10 | 11¼ | 12¼ |

SPECIAL FAIRBANKS HEAVY VALVES—B549½

With Copper Ring Disc

B549½

| Size.....inches | 2 | 2½ | 3 | 3½ | 4 | 5 | 6 | 7 | 8 | 10 | 12 |
|---------------------------|-------|-------|-------|-------|-------|-------|-------|-----|-----|-----|------|
| Screwed..... | 12.00 | 14.50 | 20.10 | 23.40 | 28.80 | 48.00 | 57.60 | 96 | 108 | 156 | 222. |
| Flanged..... | 14.10 | 16.80 | 22.20 | 25.80 | 31.20 | 50.40 | 60.00 | 96 | 108 | 156 | 222. |
| Globe, Flg. F. to F. | 9 | 10 | 10½ | 11¾ | 12½ | 14¼ | 15½ | 17½ | 18 | 22 | 23¾ |
| Angle, Flg. C. " | 4½ | 4¾ | 5 1/8 | 5 7/8 | 6 | 7 | 7½ | 8¾ | 9¾ | 11¼ | 11½ |

Brass Valves for 150 Pounds Working Pressure, see B557 to B570 and B615 to B623.

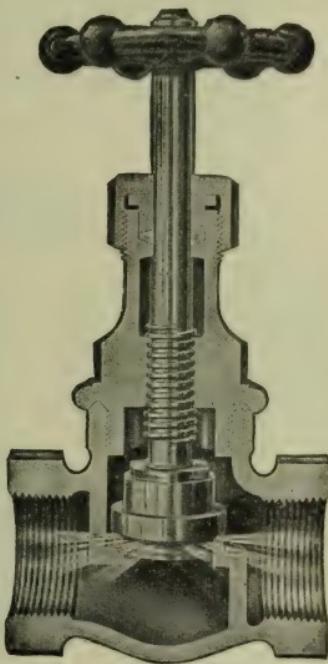
"CLEAN SEAT" BRASS VALVES

ANGLE



B549 1/2

GLOBE, SECTIONAL



B549 3/4

Positively Self-Cleaning. No Regrinding or Reseating necessary.

The positive and automatic cleaning of the seat and disc is accomplished by means of a slot or groove cut around the entire outside diameter of the disc, the bottom of the disc being hollow, with solid cast lugs on the inside. The slot is also cut through between the lugs. When the valve stem descends and the slot or groove comes flush with the seat, the steam, water, or air rushes directly across the seat of the valve, as well as the disc, just before the valve closes. It is impossible for any sediment or foreign matter to lodge on the disc or the valve seat, as the slot allows the pressure to rush through rapidly, thoroughly cleaning the seat and disc as the valve is being closed.

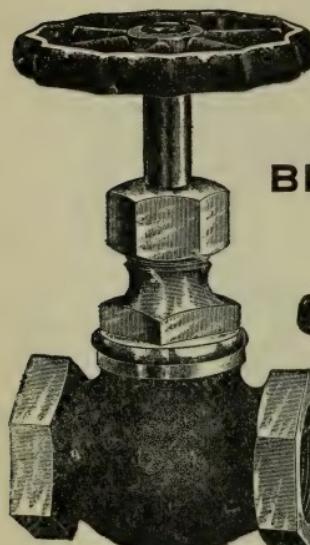
The Clean-Seat feature eliminates all possibility of wire drawing and the ruinous effects resulting therefrom.

Medium; for all pressures up to and including 200 lbs. Extra-Heavy, for 500 lbs. or less. Hydraulic; for 3,000-lbs. or less.

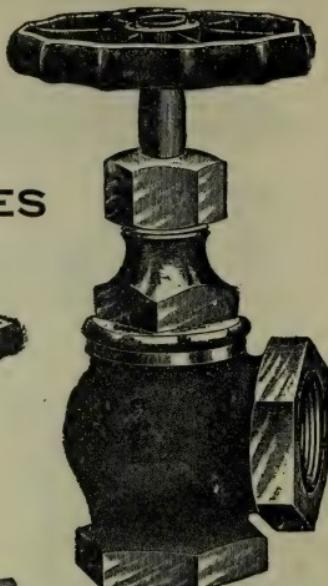
SCREWED

| Size.....inches | 1/8 | 1/4 | 3/8 | 1/2 | 5/8 | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 |
|-----------------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|
| Medium | 1.10 | 1.10 | 1.25 | 1.60 | 2.20 | 2.80 | 4.00 | 5.50 | 8.75 | 15.75 | 22.00 |
| Extra Heavy ... | .... | 3.00 | 3.50 | 4.00 | 5.00 | 6.50 | 8.25 | 11.00 | 16.00 | 33.00 | 45.00 |
| Hydraulic..... | .... | 5.00 | 5.00 | 6.00 | 7.50 | 10.00 | 12.50 | 16.50 | 24.00 | 50.00 | 65.00 |

GLOBE

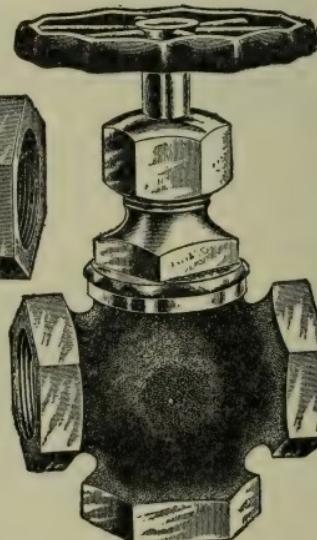


ANGLE



STANDARD BRASS VALVES

CROSS



SCREWED VALVES

| Size | inches | $\frac{1}{8}$ - $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ |
|-----------------------|--------|-------------------------------|---------------|----------------|---------------|----------------|----------------|
| Globe and Angle..... | each | .72 | .77 | 1.00 | 1.26 | 1.80 | 2.52 |
| Cross | " | 1.25 | 1.25 | 1.50 | 2.00 | 2.50 | 3.50 |
| Size..... | inches | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 |
| Globe and Angle | each | 3.50 | 5.30 | 10.00 | 14.40 | 26.50 | 36.00 |
| Cross | " | 5.00 | 8.00 | 16.00 | 24.00 | .... | .... |

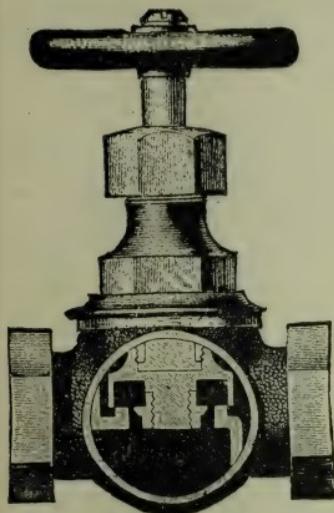
FLANGED VALVES

| Size | inches | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|-----------------------|--------|----------------|-------|----------------|----------------|-------|
| Globe and Angle | each | 5.00 | 6.75 | 8.50 | 10.50 | 16.00 |
| Size | inches | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | .... |
| Globe and Angle..... | each | 23.00 | 35.00 | 50.00 | 70.00 | .... |

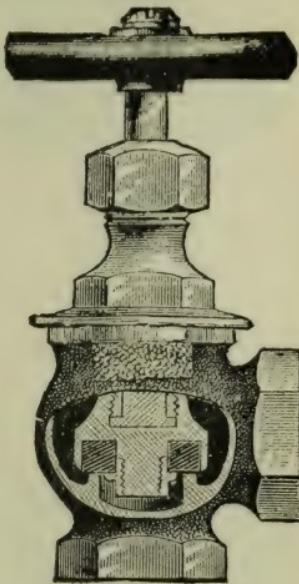
Polished Valves, Valves with Wood Wheels, with Male Threads, etc., quoted on application.

BRASS GLOBE AND ANGLE VALVES**GLOBE**

With Jenkins Discs

ANGLE

B553

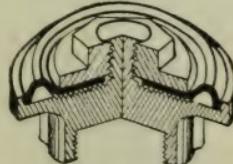


B554

| | | | | | | | | | | |
|------------------|---------------|---------------|---------------|---------------|------|----------------|----------------|------|----------------|-------|
| Size inches | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
| Screwed...each | 1.10 | 1.25 | 1.60 | 2.20 | 2.80 | 4.00 | 5.50 | 8.75 | 15.75 | 22.00 |

SMITH'S METALLIC SPRING DISC

Tested to 500 Pounds

Disc for Flat Seat
Valves—B555

Disc in Holder—B556

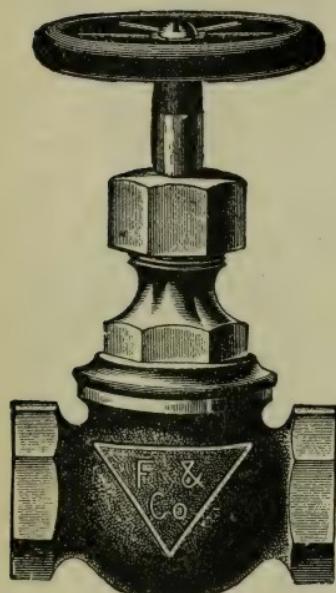
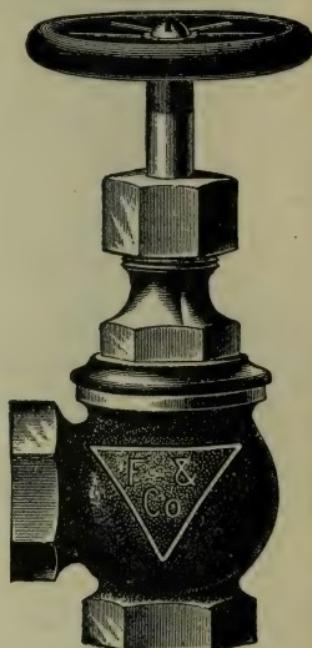
PRICE LIST DISCS FOR BRASS VALVES

| Size of Valve | Discs Each | DISCS AND HOLDERS COMPLETE | | | Size of Valve | Discs Each | DISCS AND HOLDERS COMPLETE | | |
|---------------------|---------------|-------------------------------|----------------|-------------------|---------------------|---------------|-------------------------------|----------------|-------------------|
| | | Globe Valves | Swing Check | Vertical Check | | | Globe Valves | Swing Check | Vertical Check |
| $\frac{3}{8}$ | .20 | .60 | ..... | .70 | $1\frac{1}{2}$ | .52 | 1.60 | 1.88 | 2.50 |
| $\frac{1}{2}$ | .24 | .68 | .80 | .84 | 2 | .72 | 2.24 | 2.64 | 3.30 |
| $\frac{3}{4}$ | .30 | .80 | .96 | 1.16 | $2\frac{1}{2}$ | .96 | 3.60 | 4.20 | 4.90 |
| 1 | .36 | .96 | 1.08 | 1.44 | 3 | 1.60 | 4.40 | 5.20 | 6.40 |
| $1\frac{1}{4}$ | .44 | 1.28 | 1.48 | 1.80 | ..... | ..... | ..... | ..... | ..... |

When ordering be sure to give name of the valve you intend using our disc in.
Discs for Iron Valves see page B719.

ASBESTOS DISC BRASS VALVES

(Fairbank's)

GLOBE**B557****ANGLE****B558****SCREWED**

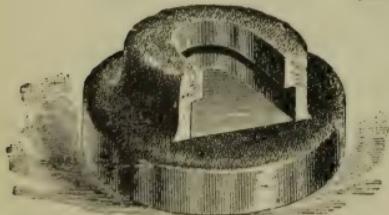
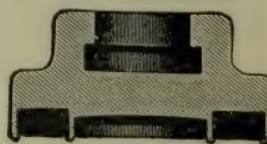
| Size..... | Inches | $\frac{1}{8}$ & $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|-----------------------|--------|-------------------------------|---------------|---------------|---------------|------|----------------|----------------|------|----------------|-------|
| Globe and Angle..each | | 1.10 | 1.25 | 1.60 | 2.20 | 2.80 | 4.00 | 5.50 | 8.75 | 15.75 | 22.00 |
| Cross..... " " | | | | 2.25 | 2.50 | 3.25 | 4.75 | 6.25 | 9.50 | 20.00 | 30.00 |

Flanged Valves quoted on application.

When used for Steam pressure above 100 pounds, the special copper ring disc should be used. Valves are heavy enough for pressures up to 150 pounds.

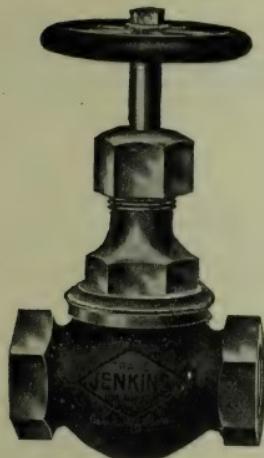
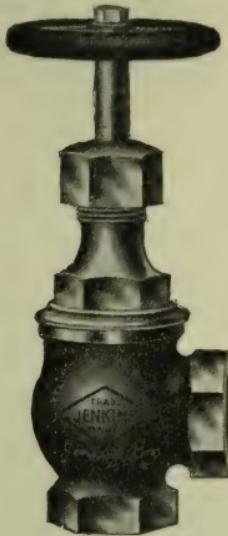
ASBESTOS DISCS

(Holder included)

Stem is
included
with $\frac{1}{8}$ and
 $\frac{1}{4}$ -inch**B559****SECTIONAL VIEW SHOWING
ASBESTOS DISC IN HOLDER.**

| Size of Valves..Inches | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|------------------------|----------------|---------------|----------------|---------------|---------------|------|----------------|----------------|------|----------------|-------|
| Net.....each | .13 | .14 | .07 | .09 | .10 | .12 | .18 | .25 | .36 | .48 | .60 |
| Size.....Inches | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ | 5 | 6 | 7 | 8 | 10 | 12 | 14 | ..... |
| Net.....each | .75 | .90 | 1.10 | 1.25 | 1.60 | 2.40 | 2.90 | 4.75 | 5.50 | 7.75 | ..... |

Copper Ring Discs for high Steam pressure quoted on application.

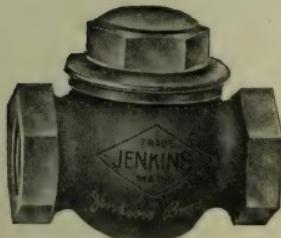
JENKINS BROS. BRASS VALVES**GLOBE****B560****ANGLE****B561****SCREWED VALVES**

| Size | inches | $\frac{1}{8}$ & $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|-------------------------|--------|-------------------------------|---------------|---------------|---------------|------|----------------|----------------|------|----------------|-------|
| Globe and Angle ...each | | 1.10 | 1.25 | 1.60 | 2.20 | 2.80 | 4.00 | 5.50 | 8.75 | 15.75 | 22.00 |
| Cross Valves.. “ | | 1.70 | 2.00 | 2.25 | 2.50 | 3.25 | 4.75 | 6.25 | 9.50 | 20.00 | 27.50 |

If wanted for higher than 100 pounds steam pressure the special metal disc is recommended. Valve is suitable for pressures up to 150 pounds.

Flanged Valves quoted on application.

Extra Discs, see B565.

HORIZONTAL CHECK**B562****VERTICAL CHECK****B563****HORIZONTAL, ANGLE AND VERTICAL**

| Size | inches | $\frac{1}{8}$ & $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|------------------|--------|-------------------------------|---------------|---------------|---------------|------|----------------|----------------|------|----------------|-------|
| Screwed.....each | | 1.10 | 1.20 | 1.30 | 1.90 | 2.60 | 3.60 | 5.00 | 7.50 | 13.50 | 21.00 |

Flanged Valves quoted on application.

Extra Discs, see B565.

BRASS Y OR BLOW-OFF VALVE

B564

JENKINS WITH RENEWABLE DISC

| Size.....inches | $\frac{3}{8}$ & $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|------------------|-------------------------------|---------------|------|----------------|----------------|-------|----------------|-------|
| Screwed ....each | 2.00 | 3.00 | 4.00 | 5.00 | 6.50 | 9.25 | 18.00 | 25.00 |
| Flanged.... " | .... | .... | 9.00 | 11.00 | 13.00 | 20.00 | 28.00 | 37.00 |

Y Valves with Regrinding Disc and Seat furnished at special price.

JENKINS DISCS

For Genuine Jenkins Valves. For Steam, Water, Oils or Acids

JENKINS COMPOSITION DISC

For Steam up to 100
Pounds

Hard, for Steam and Hot
Water

Soft, for Cold Water



B565

JENKINS STEAM METAL DISCS

For Steam Over 100
Pounds

For Extra Heavy Pres-
sures and Superheated
Steam

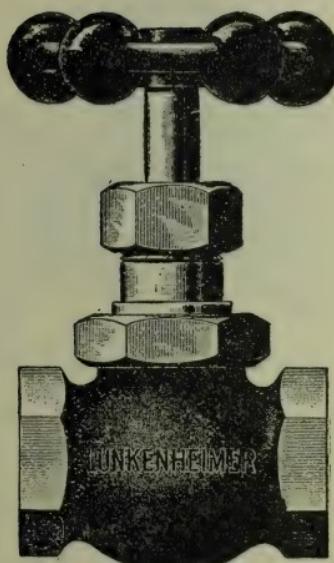
Illustration shows new style disc, having holes squared on two sides. The old style disc has perfectly round hole.

JENKINS COMPOSITION DISC

| Size Valve.....inches | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ |
|-----------------------|---------------|---------------|---------------|---------------|------|----------------|----------------|------|----------------|------|----------------|------|----------------|
| Each.....net | .03 | .04 | .04 | .05 | .06 | .09 | .12 | .18 | .24 | .33 | .45 | .52 | .60 |
| Size Valve.....inches | 5 | 6 | 7 | 8 | 9 | 10 | 12 | 14 | 16 | 18 | 20 | 24 | .... |
| Each.....net | .68 | .90 | .98 | 1.20 | 1.60 | 1.75 | 2.25 | 3.00 | 4.00 | 5.00 | 6.00 | 9.00 | .... |

JENKINS STEAM METAL DISC

| Size Valve.....inches | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ |
|-----------------------|---------------|----------------|---------------|---------------|------|----------------|----------------|------|----------------|------|----------------|
| Each.....net | .14 | .14 | .16 | .20 | .22 | .28 | .30 | .34 | .60 | .85 | 1.35 |
| Size Valve.....inches | 4 | $4\frac{1}{2}$ | 5 | 6 | 7 | 8 | 9 | 10 | 12 | 14 | .... |
| Each.....net | 1.60 | 2.00 | 2.30 | 2.60 | 3.70 | 4.00 | 5.25 | 5.60 | 7.30 | 9.80 | .... |

REGRINDING BRASS VALVES**GLOBE**

B566

ANGLE

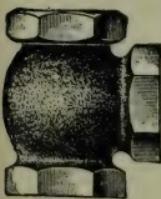
B567

LUNKENHEIMER OR WILLIAMS LIST—SCREWED

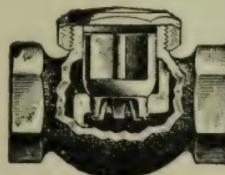
| Size.....inches | $\frac{1}{8}-\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|------------------------|---------------------------|---------------|---------------|---------------|------|----------------|----------------|------|----------------|-------|
| Globe and Angle...each | .70 | .85 | 1.15 | 1.45 | 2.00 | 2.80 | 3.90 | 6.20 | 12.00 | 16.50 |
| Cross Valves....." | 1.00 | 1.00 | 1.50 | 2.00 | 2.70 | 3.50 | 5.10 | 8.00 | 16.00 | 24.00 |

Flanged valves quoted on application.

These Regrinding Valves suitable for steam working pressure of 200 pounds.

REGRINDING BRASS CHECK VALVES**ANGLE**

B568

HORIZONTAL

B569

VERTICAL

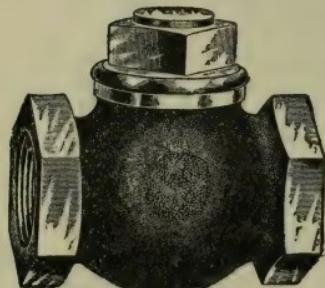
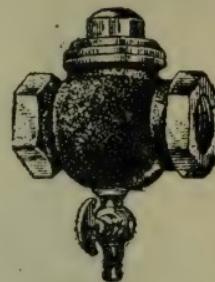
B570

LUNKENHEIMER OR WILLIAMS LIST

| Size.....inches | $\frac{1}{8}-\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|------------------|---------------------------|---------------|---------------|---------------|------|----------------|----------------|------|----------------|-------|
| Screwed.....each | .50 | .60 | .85 | 1.15 | 1.55 | 2.30 | 3.25 | 5.20 | 10.00 | 14.00 |

These Regrinding Valves suitable for steam working pressure up to 200 pounds.

STANDARD
BRASS CHECK VALVES

HORIZONTAL**B571****HORIZONTAL
With Drip Cock****B572****B571 SCREWED**

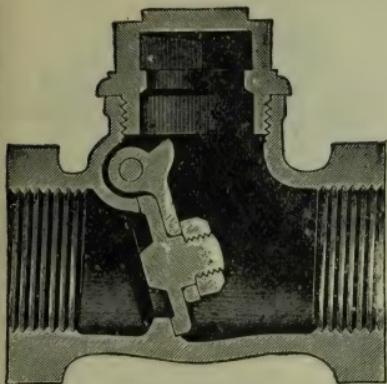
| | | | | | | | | | | | |
|------------|--------|-------------------------------|---------------|---------------|---------------|------|----------------|----------------|------|----------------|-------|
| Size..... | inches | $\frac{1}{8}$ - $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
| Each | | .65 | .70 | .90 | 1.15 | 1.60 | 2.25 | 3.15 | 4.75 | 9.00 | 13.00 |

B572. NOTE.—We will tap any size Check Valve and fit with Drip Cock. Add to above list price \$1.00

ANGLE**B573****VERTICAL****B574****SCREWED**

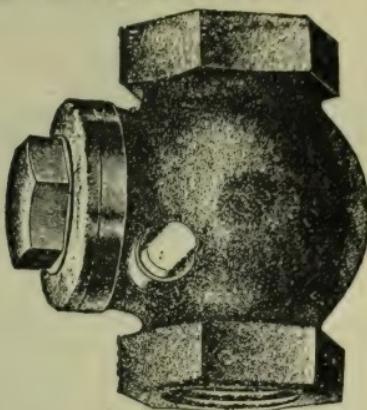
| | | | | | | | | | | |
|------------|--------|---------------|---------------|---------------|---------------|---------------|------|----------------|----------------|------|
| Size..... | inches | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
| Each | | .72 | .72 | .77 | 1.00 | 1.26 | 1.80 | 2.52 | 3.50 | 5.30 |

Flanged Valves quoted on application.

STANDARD BRASS SWING CHECK VALVES

Horizontal

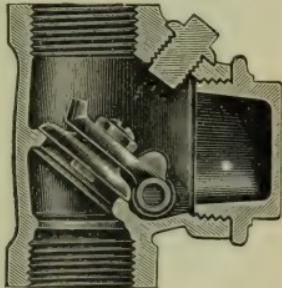
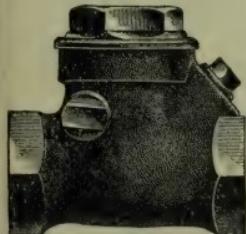
B575



Vertical

| | | | | | | | | | |
|------------------|---------------|---------------|---------------|------|----------------|----------------|------|----------------|-------|
| Size.....inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
| Screwed.....each | 2.15 | 2.25 | 2.75 | 3.50 | 4.25 | 5.50 | 7.50 | 15.00 | 22.00 |

Drip Cocks can be tapped into Swing Check Valves if desired, extra.

**PRATT & CADY (FAIRBANKS) BRASS SWING
CHECK VALVES**

B576

Horizontal, Vertical, or Angle

| | | | | | | | | | | |
|----------------------------|---------------|---------------|---------------|---------------|------|----------------|----------------|-------|----------------|-------|
| Size.....inches | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
| Screwed.....ea. | 1.25 | 1.30 | 1.50 | 1.75 | 2.25 | 3.25 | 4.25 | 6.25 | 12.00 | 20.00 |
| Fig., Hor. & Vert. " ..... | ..... | ..... | ..... | ..... | 6.25 | 7.85 | 10.25 | 15.50 | 25.00 | 32.50 |

If with Asbestos or Leather Discs, special price.

JENKINS BROS.' SWING CHECK VALVES—B577
(Not Illustrated.)

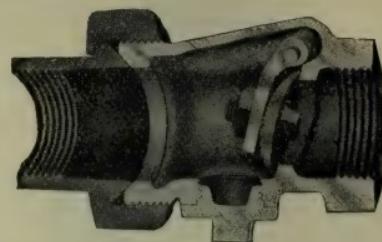
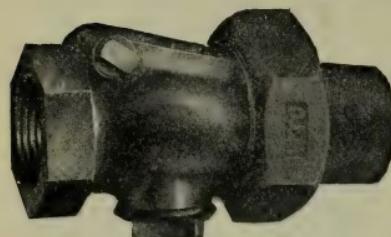
| | | | | | | | | | |
|------------------|---------------|---------------|---------------|------|----------------|----------------|------|----------------|-------|
| Size.....inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
| Screwed.....each | 1.20 | 1.30 | 1.90 | 2.60 | 3.60 | 5.00 | 7.50 | 14.00 | 21.00 |

REGRINDING SWING CHECK VALVES—(Not Illustrated)—B578
Lunkenheimer or Williams List

| | | | | | | | | | |
|------------------|------------------------------|---------------|---------------|------|----------------|----------------|-------|----------------|-------|
| Size.....inches | $\frac{1}{4} \& \frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
| Screwed.....each | 1.25 | 1.30 | 1.75 | 2.25 | 3.25 | 4.25 | 6.25 | 11.50 | 16.00 |
| Flanged....." | 2.60 | 2.90 | 3.60 | 4.90 | 7.20 | 9.20 | 12.30 | 18.50 | 26.80 |

For pressure up to 150 pounds.

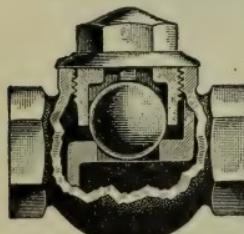
KEWANEE UNION SWING CHECK VALVE
BRASS VALVE WITH IRON UNION



B579

| Size.....inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|------------------|---------------|---------------|---------------|------|----------------|----------------|------|----------------|-------|
| Black.....each | 2.15 | 2.25 | 2.75 | 3.50 | 4.25 | 5.50 | 7.50 | 15.00 | 22.00 |
| Galvanized....." | 2.25 | 2.45 | 3.00 | 3.85 | 4.65 | 6.25 | 8.25 | ..... | ..... |

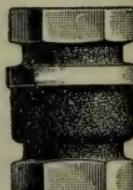
Also made in Male Union at same list.



Horizontal

B580

**BRASS BALL
CHECK VALVES**



Vertical

B581

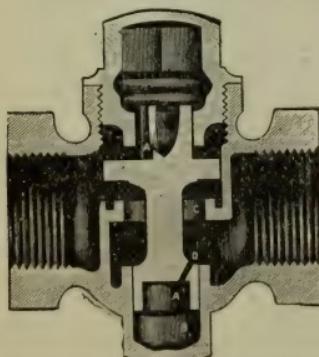
| Size....inches | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|----------------|---------------|---------------|---------------|---------------|---------------|------|----------------|----------------|------|----------------|-------|
| Screwed..each | .85 | .95 | 1.10 | 1.60 | 2.30 | 3.10 | 4.00 | 6.20 | 9.40 | 18.00 | 25.00 |

Horizontal may be fitted with drain cock, if desired.

BRASS BALLS. (Sizes above $1\frac{1}{2}$ inches are cast hollow.) **B582**

| Diam. Ball..inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | $1\frac{3}{4}$ | 2 | $2\frac{1}{4}$ | $2\frac{1}{2}$ | $2\frac{3}{4}$ | 3 | $3\frac{1}{4}$ | $3\frac{1}{2}$ | 4 |
|--------------------|---------------|---------------|---------------|-----|----------------|----------------|----------------|------|----------------|----------------|----------------|------|----------------|----------------|-------|
| Price.....each | .20 | .30 | .55 | .70 | .90 | 1.25 | 2.10 | 2.60 | 3.30 | 4.70 | 5.30 | 6.10 | 7.00 | 8.00 | 10.50 |

Larger sizes quoted on application.



**FLOWERS NOISELESS
WATER CUSHION CHECK VALVE**

For 100 Pounds Working Pressure

Special Valves for 150 Pounds, to Order

B583

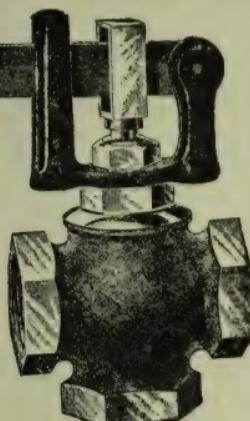
BRASS SCREWED

| Inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|-------------|---------------|---------------|------|----------------|----------------|------|----------------|-------|
| Each | 1.30 | 1.75 | 2.25 | 3.25 | 4.25 | 6.25 | 11.50 | 16.00 |

| Size.....inches | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | 5 | .6 |
|-----------------------------|----------------|-------|----------------|-------|-------|-------|
| Iron Body, Screwed.....each | 10.00 | 12.00 | 16.00 | 18.00 | 25.00 | 32.00 |

BRASS SAFETY VALVE

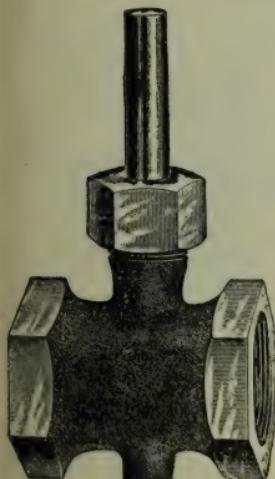
WITH BALL AND LEVER

BRASS
VACUUM VALVE

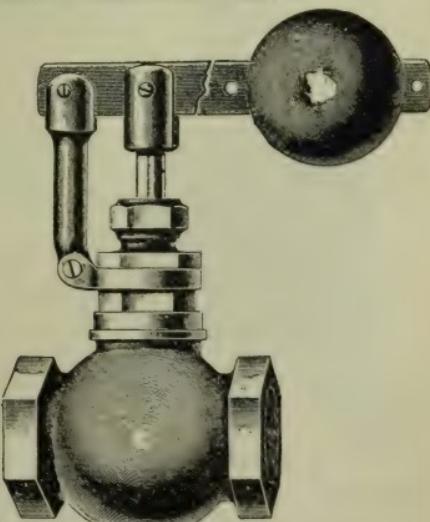
B584

B585

| Size.....inches | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|-----------------|---------------|---------------|---------------|---------------|------|----------------|----------------|-------|----------------|-------|
| Safety.....each | 2.20 | 2.50 | 3.25 | 3.90 | 4.70 | 7.15 | 9.00 | 12.50 | 22.50 | 33.50 |
| Vacuum..... " | .... | .... | 1.50 | 2.00 | 2.50 | 3.00 | .... | .... | .... | .... |

BRASS
BUTTERFLY VALVE

BRASS BALANCED VALVE



B586

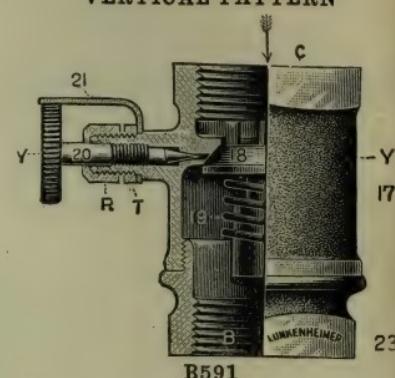
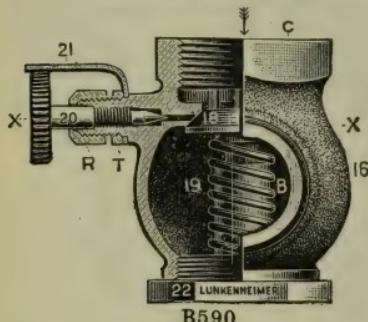
B587

| Size.....inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|--------------------------|---------------|---------------|------|----------------|----------------|-------|----------------|-------|
| Butterfly Valve.....each | .... | 3.10 | 4.40 | 5.65 | 6.75 | 10.00 | 13.75 | 21.00 |
| Balanced Valve..... " | 5.50 | 6.50 | 8.00 | 8.75 | 9.50 | 13.00 | 16.50 | 25.00 |

GENERATOR VALVES FOR GASOLINE ENGINES

VERTICAL PATTERN

ANGLE PATTERN



| Size..... | Inch | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|-------------------|------|---------------|----------------|----------------|----------------|----------------|------|
| Price..... | each | 2.60 | 3.30 | 4.00 | 4.80 | 6.00 | 7.50 |
| For Cylinder..... | Inch | 2 | $3\frac{1}{2}$ | $4\frac{1}{2}$ | $5\frac{1}{2}$ | 7 | 8 |

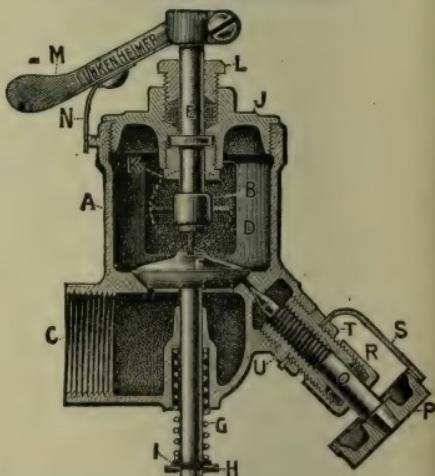
The above proportions are based on a piston travel of not more than 600 feet per minute. For higher speeds than this, the Generator Valve should be the next size larger than shown above.

LUNKENHEIMER "NONPAREIL" GENERATOR VALVES
 (Patent applied for.)

RIGHT HAND PATTERN TYPE A



LEFT HAND PATTERN



| Size..... | Inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|--|------------------|---------------|----------------|----------------|----------------|----------------|-------|
| Improved Type A Generator Valve | each | 5.00 | 6.25 | 7.50 | 9.00 | 11.20 | 27.50 |
| Type B (wheel top, instead of lever) | " | 4.25 | 5.25 | 6.25 | 7.75 | 9.40 | 25.00 |
| Type C..... | " | 5.40 | 6.75 | 8.50 | 10.00 | 12.50 | 30.00 |
| Suitable for Cylinder..... | Diameter, inches | 2 | $3\frac{1}{2}$ | $4\frac{1}{2}$ | $5\frac{1}{2}$ | 7 | 8 |

The above proportions are based on a piston travel of not more than 600 feet per minute. For higher speeds than this, the generator valve should be the next size larger than specified. Type C is similar to Type B, having small brass wheel thumb screw top; it also has a butterfly valve in outlet passage.



GASOLINE ENGINE GENERATOR VALVE THROTTLE

B593

| Size....inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|----------------|---------------|---------------|------|----------------|----------------|------|
| Price.....each | 1.90 | 2.10 | 2.70 | 3.30 | 4.00 | 5.00 |

This valve is placed between the generator valve and the engine and is used for regulating the speed of the engine. While we have found that our device for controlling the lift of the disc is the best method for regulating the supply of mixture to the cylinder, nevertheless the throttle valve alone is preferred by some for this purpose. It is, however, a very valuable addition in connection with our generator

valves, B590 and B591, which are constructed without the device for regulating the lift of the disc. The throttle is made of brass, neatly finished, and the disc being balanced will remain at any degree of opening.

GASOLINE STRAINERS FOR GENERATOR VALVES

Horizontal or Angle with Clean-out Screw (not illustrated), pipe size, $\frac{1}{8}$ -inch, \$0.90; $\frac{3}{8}$ -inch, \$1.00 each; $\frac{1}{2}$ -inch, \$1.20; $\frac{5}{8}$ -inch, \$1.55. If with Drain Cock add 55c.

GASOLINE CYLINDER RELIEF COCKS

Short Shank, Tee Handle

Angle Shank Lever Handle. Left Hand Pattern. With Priming Cup

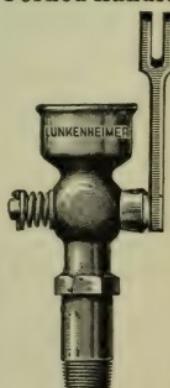
Forked Handle



B594



B595



B596

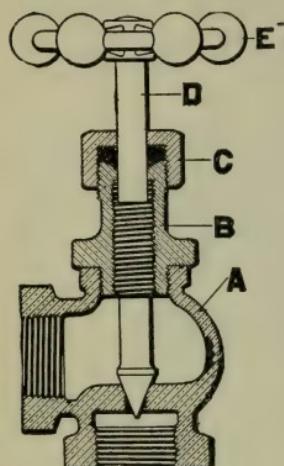
RELIEF COCKS

| Size |inches | $\frac{1}{8}$ | $\frac{3}{16}$ | $\frac{5}{16}$ | $\frac{1}{2}$ | $\frac{3}{4}$ |
|---|-------------|---------------|----------------|----------------|---------------|---------------|
| Lever Handle, Long Shank (not illustrated).....each | | 1.30 | 1.70 | 2.30 | 3.40 | 4.40 |
| Tee Handle, Short Shank B594 | " | 1.10 | 1.50 | 2.10 | 3.20 | 4.20 |

COMBINED PRIMING CUP AND RELIEF COCK

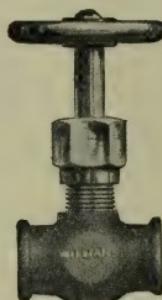
| Size |number | 00 | 0 | 1 | 2 | 3 | 4 |
|--|-------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Pipe size |inch | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{1}{4}$ | $\frac{3}{8}$ |
| B595 Angle shank and Lever Handle | each | 85 | 1.00 | 1.15 | 1.35 | 1.60 | 1.90 |
| B596 Straight shank, with Forked Lever.. | " | 95 | 1.15 | 1.30 | 1.50 | 1.75 | 2.00 |
| " " " Tee Handle .." | | 70 | .80 | .90 | 1.00 | 1.30 | 1.50 |
| " " " Lever Handle .." | | 75 | .85 | .95 | 1.10 | 1.40 | 1.65 |

NEEDLE POINT VALVES



Sectional View

B600

LIGHT PATTERN
GASOLINE

B601

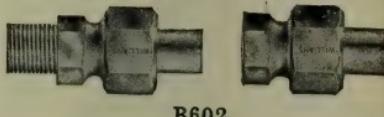
UNIONS

For Brass or Copper Tubing

BRAZING UNIONS

Male

Female



B602

FLARED TUBING UNIONS



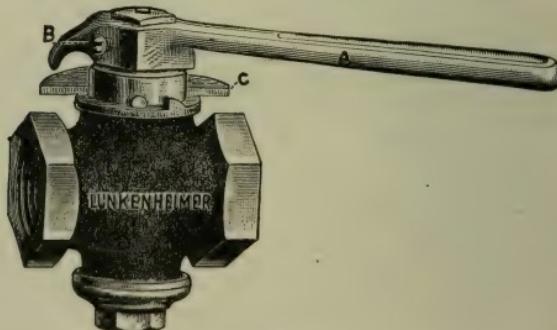
B603

Can be furnished with male pipe thread one end if desired. Prices on application.

| Size..... |inches | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ |
|----------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Globe or Angle, Brass Stem | | .65 | .75 | .85 | 1.60 | 2.00 |
| " " " " with union | { Rough..... | .65 | .75 | .85 | 1.60 | 2.00 |
| | { Brass | .80 | .95 | 1.15 | 1.95 | 3.10 |

Cross Valves, also Valves with steel stems quoted on application.

GAS ENGINE THROTTLE COCK



B604

| Size..... |inches | $\frac{1}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ |
|------------------------------------|-------------|---------------|---------------|---------------|------|----------------|----------------|-------|----------------|
| Brass Finished Lever and Dial, ea. | 1.70 | 1.90 | 2.30 | 3.00 | 4.50 | 6.20 | 10.00 | 22.00 | |
| " " " all over....." | 2.40 | 2.70 | 3.20 | 4.20 | 6.00 | 8.20 | 12.50 | 25.00 | |

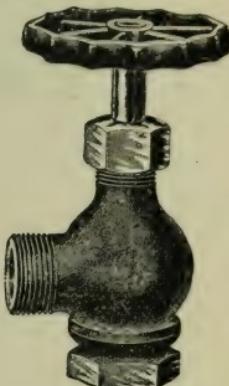
The form of stop cock shown above is extensively used on gas engines to throttle the supply of gas to the mixer. The cock has a graduated dial (C), so that the adjustment of the quantity of gas can be arrived at accurately. It is also provided with stop, so that the cock can not be left turned on through carelessness.

BRASS HOSE VALVES**STANDARD PATTERN**

B605

GARDEN HOSE VALVES

B606



B607

| Size..... | Inches | $\frac{1}{2}$ & $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ |
|-------------------------------|--------|-------------------------------|------|----------------|----------------|------|----------------|
| B605 { Rough Brass..... | Each | | 3.15 | 3.70 | 4.75 | 7.00 | 8.50 |
| Rough Nickeled..... | " | | 3.65 | 4.30 | 5.50 | 8.00 | 9.75 |
| B606 and 607, Rough Brass.... | " | 1.65 | 2.20 | 3.40 | 4.75 | 7.00 | 12.00 |

When ordering state what thread is wanted on outlet. As regularly made valves have standard hose thread. Can be made any thread desired.

**BRASS GATE VALVE**

With Hose Thread and

Cap and Chain

B609

| Size..... | Inches | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ |
|---|--------|------|----------------|----------------|-------|----------------|
| Rough Body, Plain, with Brass Cap and Chain, Each | 3.75 | 4.85 | 6.50 | 9.25 | 16.50 | |
| Rough Body, Plain, without Brass Cap and Chain " | 2.50 | 3.50 | 5.00 | 7.50 | 14.00 | |
| Fin. and Nickeled, Brass Cap, Wheel and Chain " | 7.35 | 9.35 | 11.00 | 16.00 | 26.00 | |

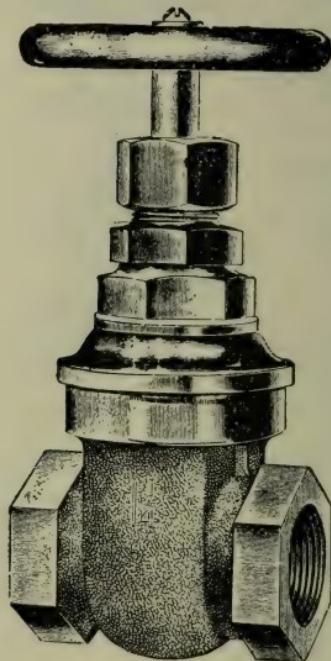
Valves can be furnished with Automatic Drip, or with Pet Cock, at special net prices.

When ordering send hose coupling, so that valve can be threaded to suit.

These valves have female iron pipe thread and male hose thread, and are always made to order to suit hose thread.

**STANDARD
STRAIGHT WAY GATE VALVES**

Brass



B610

PRICE EACH

| Size | inches | $\frac{1}{4}$ - $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|------------------|--------|-------------------------------|---------------|---------------|------|----------------|----------------|-------|----------------|----------------|
| Screwed | | 1.25 | 1.30 | 1.75 | 2.50 | 3.50 | 5.00 | 7.50 | 14.00 | 20.00 |
| Flanged | | | | | 5.00 | 7.00 | 10.00 | 14.00 | 24.00 | 34.00 |
| Diam. Flgs...in. | | | | | | | | 6 | 7 | $7\frac{1}{2}$ |

Larger sizes quoted on application.

Standard Brass Gate Valves are recommended for pressures up to 100 pounds; they are often satisfactory on considerably higher pressure. It is not only a question of the valve standing the higher pressure, but also standing the strain of expansion, contraction, weight of piping and settling, also the cutting effect of the high pressure steam on the discs and seats.

Valves with Finished Brass Wheels made to order only.

| Size..... |inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|----------------------------|-------------|---------------|---------------|------|----------------|----------------|-------|----------------|-------|
| Rough Body, Screwed..... | | 2.70 | 3.25 | 4.05 | 5.50 | 7.10 | 10.30 | 18.00 | 25.00 |
| Finished all over, Screwed | | 3.65 | 4.25 | 5.50 | 7.25 | 8.75 | 13.25 | 22.00 | 30.00 |
| " and Plated. " | | 3.95 | 4.60 | 5.90 | 7.70 | 9.25 | 14.00 | 23.00 | 31.50 |

Wood Wheel Valves and Valves with Unions come under the head of Radiator Valves.

**SCOTT'S BRASS
STRAIGHT WAY GATE VALVES**

**WEDGE
DOUBLE DISC**

**STATIONARY
STEM**



B612

| Size .. inches | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|----------------|---------------|---------------|---------------|---------------|------|----------------|----------------|-------|----------------|-------|
| Screwed .. ea. | 1.25 | 1.25 | 1.30 | 1.75 | 2.50 | 3.50 | 5.00 | 7.50 | 14.00 | 20.00 |
| Flanged .. " | ..... | ..... | ..... | ..... | 9.00 | 12.00 | 14.00 | 24.00 | 34.00 | ..... |

Valves with Unions, also larger sizes, special.

SPECIAL BRASS VALVES

SLIDING STEM AND LEVER GATE

SERVICE GATE



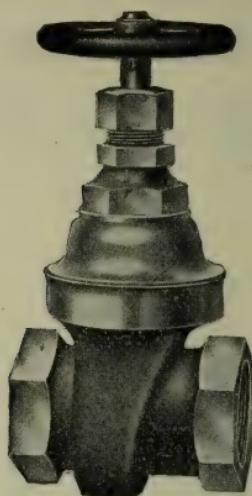
B613



B614

| Size | inches | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|------------------------------|--------|---------------|------|----------------|----------------|-------|----------------|---|
| B613 { Screwed each | 3.25 | 4.50 | 6.00 | 8.00 | 12.00 | 22.00 | 30.00 | |
| { Flanged " | | | | | 18.50 | 32.00 | 45.00 | |

Service Gate, at special net prices. State whether wanted with or without waste.

SPECIAL BRASS GATE VALVES**JENKINS BRASS GATE VALVES—B615**

Stationary Stem. Renewable Disc Ring

| Size | inches | $\frac{5}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|---------------------------|--------|---------------|----------------|---------------|----------------|----------------|----------------|-------|----------------|-------|
| Screwed.....each | | 1.90 | 2.00 | 2.50 | 3.25 | 4.25 | 5.25 | 7.50 | 14.00 | 20.00 |
| Flanged..... " | | 3.50 | 4.50 | 6.00 | 7.50 | 10.00 | 14.00 | 21.00 | 28.00 | |
| Disc Rings, net..... " | | .10 | .10 | .10 | .10 | .10 | .12 | .30 | .40 | |
| Diam. Flanges..... inches | 3 | 3 | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ | 5 | 6 | 7 | $7\frac{1}{2}$ | |

Jenkins Gate Valves are also made with Rising Stem.

FAIRBANKS BRASS GATE VALVES—B616

Stationary Stem. Asbestos Seat Rings

| Size | inches | $\frac{1}{4} & \frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|------------------------|--------|-----------------------------|---------------|---------------|------|----------------|----------------|-------|----------------|-------|
| Screwed.....each | | 1.50 | 1.65 | 2.20 | 2.80 | 4.00 | 5.30 | 7.80 | 17.00 | 23.00 |
| Flanged..... " | | 4.65 | 5.65 | 7.50 | 9.35 | 14.00 | 16.00 | 26.50 | 35.75 | |
| Seat Rings, net..... " | | .08 | .08 | .10 | .14 | .16 | .20 | .30 | .70 | .90 |

Larger sizes quoted on application.

Fairbanks Valves are also made with Rising Stem.

CHAPMAN BRONZE GATE VALVES—B617

Stationary Stem. Solid Bronze Seats

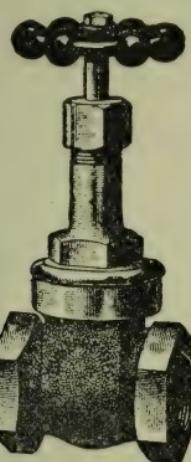
Chapman's List No. 1, for Steam or Water up to 125 Pounds Pressure

| Size.....inches | $\frac{1}{4} & \frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 |
|--|-----------------------------|---------------|---------------|------|----------------|----------------|-------|----------------|----------------|----------------|-------|
| Screwed ...each | 1.25 | 1.35 | 1.65 | 2.30 | 2.80 | 3.75 | 5.75 | 9.65 | ..... | ..... | ..... |
| Flanged ... " | ..... | 2.75 | 3.85 | 4.65 | 6.75 | 9.50 | 15.30 | ..... | ..... | ..... | ..... |
| With Sliding Stem and Lever, add | .70 | .70 | .70 | .70 | .75 | 1.00 | 1.00 | 1.10 | ..... | ..... | ..... |
| Diam. Flgs. in. | | | | | $4\frac{1}{2}$ | 5 | 6 | 7 | $8\frac{1}{2}$ | 9 | |

(List No. 4) Valves, similar to No. 1, can be furnished Solid Bronze or with Babbitt Metal seats. Sizes $\frac{1}{4}$ -inch to 4-inch, and run from 10% to 20% higher price than No. 1. Babbitt Metal seats are not suitable for over 325 degrees (or 80 pounds) steam.

BRASS DOUBLE GATE VALVES

For pressure to 150 pounds



With Rising Stem

B625

LUNKERHEIMER OR WILLIAMS LIST

| Size..... | inches | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|---------------|--------|---------------|---------------|---------------|---------------|------|----------------|----------------|-------|----------------|-------|
| Screwed | each | 1.10 | 1.10 | 1.30 | 1.90 | 2.50 | 3.50 | 5.00 | 7.50 | 14.00 | 20.00 |
| Flanged | " | 2.60 | 3.00 | 4.00 | 5.30 | 7.70 | 10.50 | 14.00 | 21.00 | 32.00 | |

BRASS LEVER THROTTLE VALVES

LEVER THROTTLE VALVE
For not Over 175 pounds Working
Pressure



B626

HANDY GATE VALVE
For not Over 75 pounds Working
Pressure



SCREWED

B627

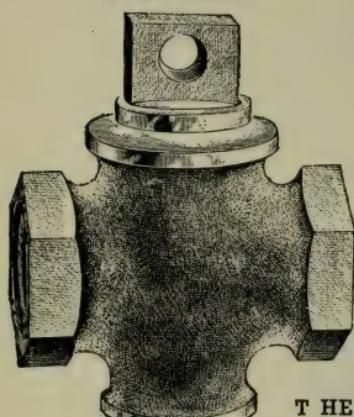
| Size..... | inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | 4 |
|---------------------|--------|---------------|---------------|------|----------------|----------------|-------|----------------|-------|-------|
| Lever Throttle..... | each | ..... | 3.00 | 4.00 | 5.00 | 7.00 | 10.00 | 19.00 | ..... | ..... |
| Handy Gate..... | " | 1.60 | 1.80 | 2.50 | 3.50 | 5.00 | 7.50 | 13.50 | 19.00 | 60.00 |

The Throttle Valve is especially adapted as a throttle for traction and hoisting engines, saw mills, steam hammers, pile drivers, etc.

See also Iron Valves, B780 & B781

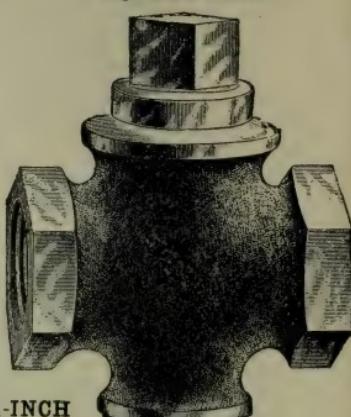
STANDARD BRASS STEAM COCKS

FLAT HEAD

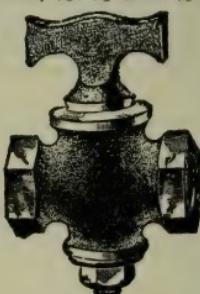


B650

SQUARE HEAD



B651

T HEAD, $\frac{1}{8}$, $\frac{1}{4}$ and $\frac{3}{8}$ -INCH

B652

| Size ...inches | $\frac{1}{8}$ - $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|-------------------------------------|-------------------------------|---------------|---------------|---------------|------|----------------|----------------|------|----------------|-------|
| Flat, Square or T head each | .85 | 1.00 | 1.25 | 1.70 | 2.35 | 3.70 | 4.85 | 7.30 | 14.50 | 22.50 |
| Extra, if with check pin....each | .15 | .15 | .15 | .20 | .20 | .25 | .30 | .35 | .50 | .75 |

Cocks 1 inch and larger, with flanged ends, at special price.

Cocks $3\frac{1}{2}$ inch to 6 inch made to order at special price.

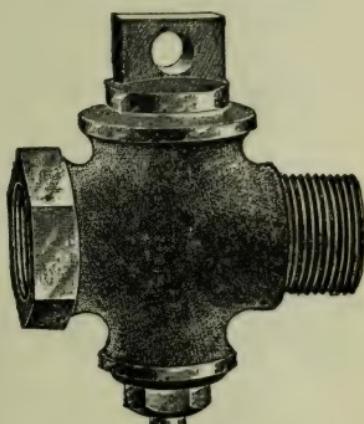
MALLEABLE IRON WRENCHES



B653
For Square or Flat Head Cocks

| Size of Cock inches | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|-------------------------------|---------------|---------------|---------------|---------------|----|----------------|----------------|----|
| Each | 10 | 10 | 10 | 15 | 25 | 40 | 40 | 50 |

When ordering state dimensions of head.

SPECIAL BRASS STEAM COCKS**THREE-WAY WITH CHECK PIN****B654****MALE AND FEMALE****B655**

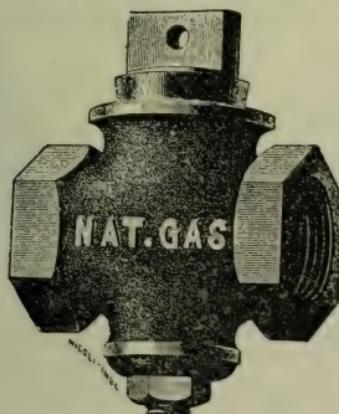
| Size..... | inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|-----------------------|--------------|---------------|---------------|---------------|------|----------------|----------------|-------|----------------|----------|
| Three-Way..... | | 2.50 | 3.00 | 3.75 | 5.75 | 7.15 | 11.00 | 18.75 | 26.00 | |
| Male and Female | | 1.45 | 2.00 | 2.50 | 3.00 | 5.35 | 6.75 | 9.85 | 17.50 | 25.75 |

Larger Sizes, to order at special price.

SPECIAL EXTRA HEAVY BRASS, NATURAL GAS COCK

Intended for very high pressure, Natural Gas Lines, or Wells.

For ordinary Natural or Artificial Gas Service Cocks, see next page.

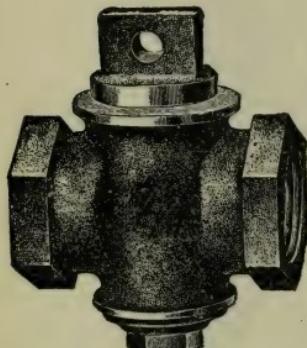
**B656**

| Size..... | inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|-----------|--------------|---------------|---------------|---------------|------|----------------|----------------|------|
| Each..... | | .65 | 1.05 | 1.45 | 2.15 | 3.40 | 4.55 | 6.85 |

BRASS GAS SERVICE COCKS

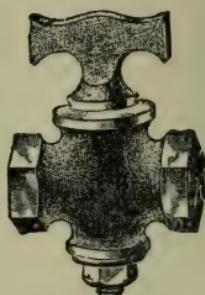
For Natural or Artificial Gas

FLAT HEAD



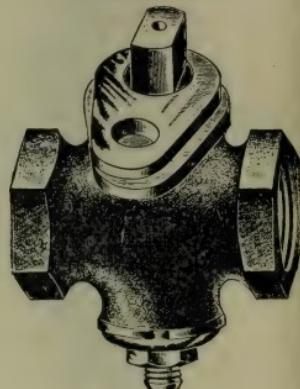
B660

T HEAD



B661

LOCK HEAD



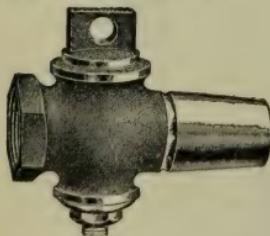
B662

| Size inches | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|------------------------|---------------|---------------|---------------|---------------|------|----------------|----------------|------|
| Flat Head each | .75 | .85 | .95 | 1.15 | 1.50 | 2.25 | 3.10 | 5.00 |
| Tee Handle “ | .75 | .85 | ... | ... | ... | ... | ... | ... |
| Lock Head “ | ... | ... | 1.30 | 1.60 | 2.10 | 3.50 | 5.00 | 7.00 |

For Gas Stove Cocks see Gas Goods farther along in book.

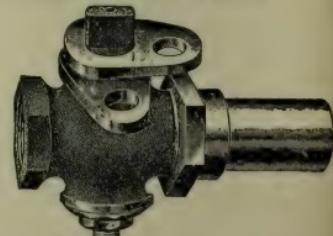
GAS METER COCKS

FLAT HEAD, PLAIN



B663

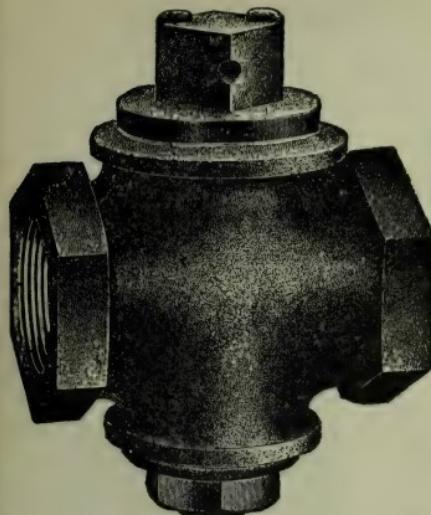
LOCK HEAD, WITH UNION



B664

| Size..... | inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|----------------------|--------|---------------|---------------|------|----------------|----------------|------|
| B663 Plain Head..... | each | 1.30 | 1.40 | 1.95 | 3.00 | 4.25 | 6.00 |
| " " with Union.. | " | 1.40 | 1.55 | 2.20 | 3.40 | 5.00 | 7.00 |
| B664 Lock " | " " | 1.50 | 1.80 | 2.50 | 4.00 | 5.50 | 8.00 |
| " " without " | " | 1.40 | 1.75 | 2.30 | 3.85 | 5.50 | 7.75 |

For Gas Stove Cocks see **Gas Goods** farther along in book.



B670

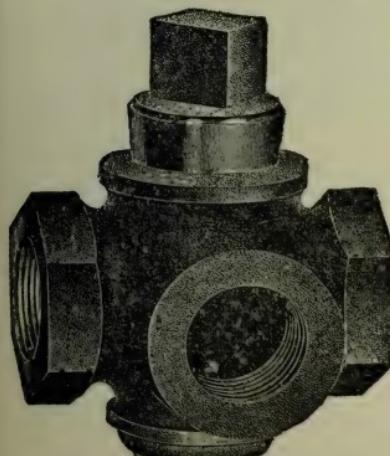
Screwed

STANDARD IRON COCKS

Square Head regularly in Stock.
Can be furnished in Flat Head if desired.
(Flanged Cocks quoted on application.)

| Size | inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|---|--------|----------------|---------------|----------------|----------------|----------------|--------|
| All Iron | each | .90 | 1.05 | 1.30 | 1.60 | 1.95 | 2.70 |
| " " with Brass Washers | " " | 1.00 | 1.20 | 1.55 | 1.95 | 2.35 | 3.20 |
| Iron, with Brass Plug | " " | 1.30 | 1.60 | 1.90 | 2.65 | 3.75 | 5.25 |
| Size | inches | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | 5 | 6 |
| All Iron | each | 4.40 | 6.75 | 12.00 | 15.50 | 32.00 | 45.00 |
| " " with Brass Washers | " " | 5.15 | 7.75 | 14.00 | 19.00 | 38.00 | 53.00 |
| Iron, with Brass Plug | " " | 8.75 | 13.00 | 27.50 | 36.50 | 67.00 | 94.00 |
| Oil Country Cocks , a special heavy Flat Head Iron Cock with Brass Washer, not illustrated | | | | | | 1-inch | 2-inch |
| | | | | | | 2.00 | 4.50 |

Extra Heavy Iron Cocks quoted on application.

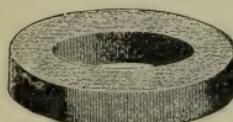
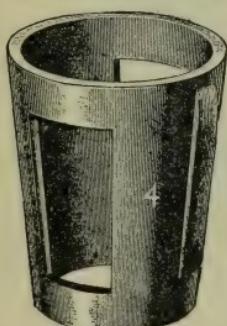
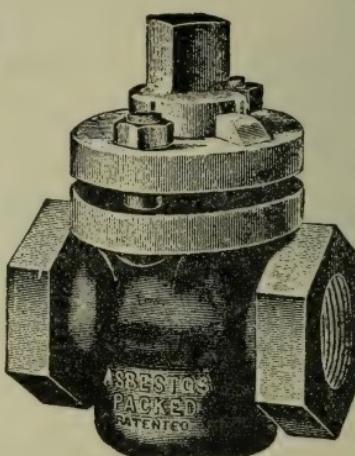
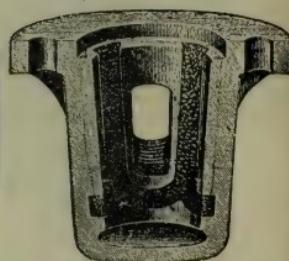


B671

**STANDARD
IRON THREE WAY
COCKS**

Screwed

| Size | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|-------------------|----------------|-------|----------------|----------------|------|
| All Iron..... | 1.65 | 1.80 | 2.05 | 2.65 | 3.65 |
| With Brass Washer | 1.80 | 2.05 | 2.40 | 3.05 | 4.15 |
| " " Plug.. | 2.20 | 2.40 | 3.10 | 4.50 | 6.25 |
| Size | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | ... |
| All Iron..... | 5.35 | 7.50 | 14.00 | 19.00 | ... |
| With Brass Washer | 6.10 | 8.50 | 16.00 | 22.50 | ... |
| " " Plug.. | 9.75 | 13.75 | 30.00 | 40.00 | ... |

ASBESTOS PACKED IRON COCKS**Asbestos Ring****Asbestos Bushing****For Regular Renewable Pattern Cocks, No. 1****Sectional View of Body of No. 0, 2 and 3****B 675
SCREWED****"U" Packed Cocks, suitable for use where pressure is over 90 pounds**

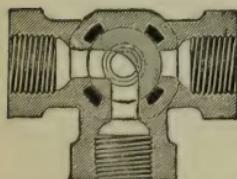
| Sizes.....inches | $\frac{1}{8}$ & $\frac{3}{16}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|-----------------------------|--------------------------------|---------------|---------------|---------------|------|----------------|----------------|-------|----------------|-------|
| No. 1 or 0 Standard.....ea. | 1.30 | 1.45 | 1.60 | 2.10 | 2.50 | 3.50 | 4.75 | 7.00 | 12.00 | 18.00 |
| No. 2 Heavy | 1.50 | 1.75 | 2.00 | 2.50 | 3.00 | 4.25 | 5.75 | 8.50 | 14.50 | 21.50 |
| No. 3 Extra Heavy..... " | .... | .... | 2.40 | 3.00 | 3.50 | 5.00 | 6.75 | 10.00 | 17.00 | 26.00 |
| Bushings, Net..... " | .... | .... | .50 | .75 | 1.00 | 1.40 | 1.90 | 2.40 | 2.90 | 3.50 |
| Rings, Net..... " | .... | .... | .08 | .11 | .17 | .20 | .25 | .34 | .50 | .80 |
| *Repacking U Cock, Net... | .... | .... | .90 | .95 | 1.00 | 1.55 | 1.95 | 3.15 | 5.70 | 7.80 |

*Also add express or freight to and from the factory, as these U pattern cocks can only be repacked by returning to the factory in Connecticut.

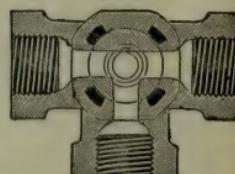
Pressures, Bushed pattern, No. 1 intended for 80 pounds or less, but many are in use on considerably higher pressures. The U pattern Standard, No. 0 for 100 pounds. Heavy, No. 2 for 150 pounds, and Extra Heavy, No. 3 for 250 pounds.

Flanged also Angle Cocks furnished from factory.

No. 1. Bushed Cocks with taper plug and renewable bushing can be repacked without removing from the line



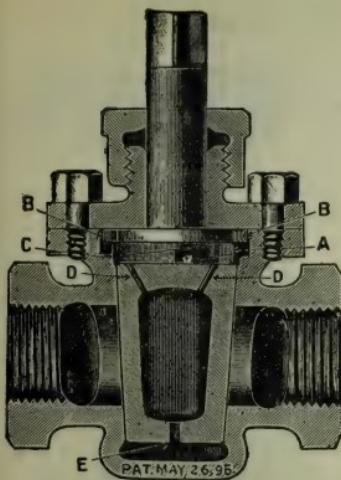
"B" PATTERN
3-Way Iron Cock, "U" Packed For Factory Shipment Only

B 679**SCREWED****B 680**

| Size.....inches | $\frac{1}{8}$ | $\frac{3}{16}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | 5 |
|-----------------|---------------|----------------|------|----------------|----------------|-------|----------------|-------|----------------|-------|-------|
| No. 4 or 5 each | 2.85 | 3.15 | 4.40 | 5.95 | 8.75 | 15.00 | 22.50 | 33.75 | 37.50 | 56.25 | 75.00 |

No. 4. Two Openings in Plug. Side port and either line port can be connected; all three ports can be closed.

No. 5 Three Openings in Plug. All three ports can be open; any two can be open and the third closed.



HOMESTEAD VALVE

This valve is so constructed that when it is closed it is at the same time forced firmly to its seat. A quarter of a turn in the direction for closing it causes the cam to rise and take a bearing on the upper surface of the chamber. A slight motion in the other direction immediately releases the cam and the plug turns easily.

For steam, compressed air and hydraulic.

The 150 Pound Pressure Valve is an unexcelled

BLOW-OFF COCK

All Iron, All Brass, and Iron with Brass
Plug, at varying discount.

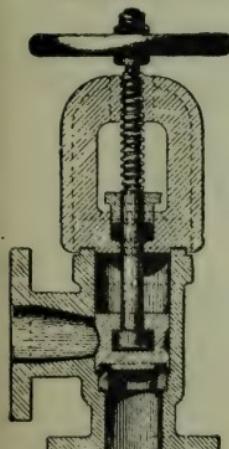
B681

FOR *150 POUNDS PRESSURE

| Size..... | inches | $\frac{1}{8}$ & $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|------------------------|--------|-------------------------------|---------------|---------------|---------------|------|-----------------|----------------|-------|----------------|-----|
| Screwed..... | | 1.00 | 1.20 | 1.65 | 2.10 | 3.00 | 4.50 | 6.30 | 10.95 | 18. | 30. |
| Flanged..... | | | | | | 3.90 | 5.85 | 8.10 | 14.25 | 24. | 39. |
| 3-Way Screwed..... | | | 2.25 | 2.40 | 4.65 | 6.00 | 8.10 | 10.80 | 16.20 | 27. | 38. |
| Locking Cock..... | | | | 1.35 | 1.75 | 2.30 | 4.00 | 5.25 | 7.50 | 11. | 18. |
| Diam. of Flgs...inches | | | | | | 4 | 4 $\frac{1}{2}$ | 5 | 6 | 7 | 8 |

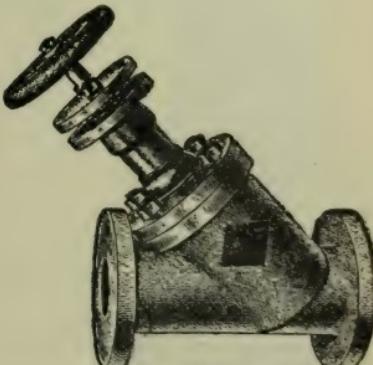
Locking Cocks (not illustrated) are all iron. The 3-Way Valve is for 200 pounds pressure.

*Homestead Valves for Higher Pressure see page 109.



IRON BODY
BLOW-OFF
VALVES

B685 ANGLE



B686 JENKINS Y VALVE

| Size | inches | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | 5 | 6 | 8 |
|-----------------------------|--------|-------|----------------|-------|----------------|-------|-------|--------|------|
| B685 Angle, Scr. or Fig. ea | 15.00 | 20.00 | 30.00 | .... | .... | .... | .... | .... | .... |
| B686 Y { Screwed | 11.00 | 15.00 | 20.00 | 28.00 | 35.00 | 59.00 | 70.00 | 115.00 | .... |
| B686 Y { Flanged | 13.00 | 18.00 | 23.00 | 31.00 | 38.00 | 64.00 | 70.00 | 115.00 | .... |

B685 Angle Valve wears well and gives splendid satisfaction. It can be furnished with Extra Heavy diameter Flanges if desired. Disc can be renewed in a few minutes. Also made $1\frac{1}{4}$, and $1\frac{1}{2}$ inch Brass Angle and Globe.

B685 is also made Extra Heavy, Angle or Straight, use above list price.

B686. The Y valve has no pocket or anything to obstruct the passage. It shuts against the pressure. Internal arrangements are same as Jenkins Bros' valves.

"CLEAN SEAT" BLOW-OFF VALVE
SCREWED SECTIONAL



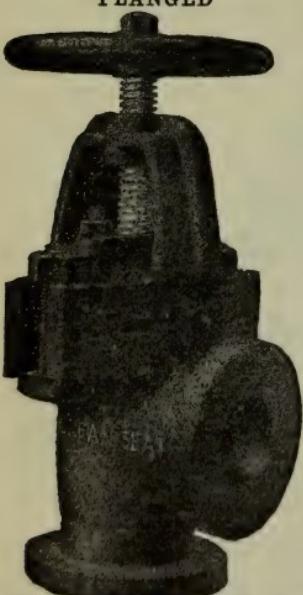
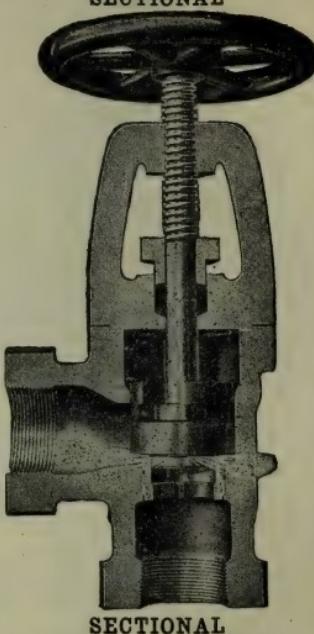
ANGLE PATTERN,
 IRON BODY,
 BRASS STEM.

Suitable for pressures
 up to 300 lbs.

SCREWED
B686½

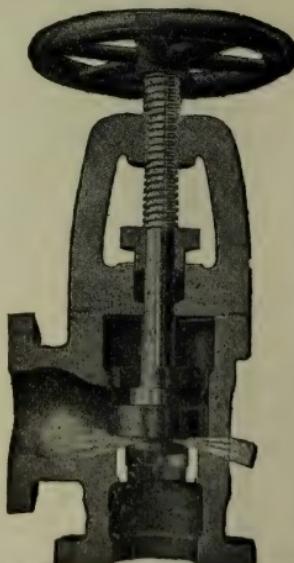
Construction similar
 to the regular Clean
 Seat Valves illustrated
 on a preceding page in
 this catalogue.

The ideal Blow-Off
 Valve. Positively self-
 cleaning. No regrind-
 ing or reseating neces-
 sary.



FLANGED

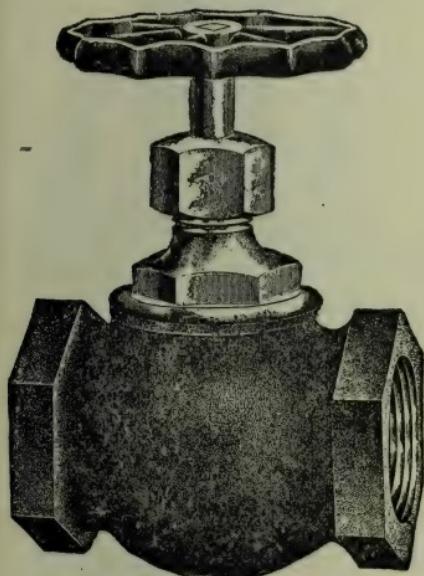
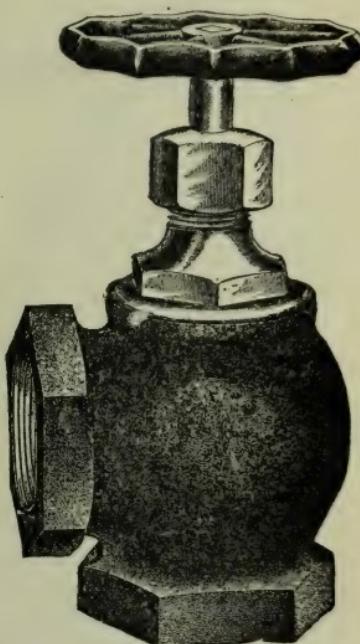
B686½



| Size..... | 1½ | 2 | 2½ | 3 |
|--|-------|-------|-------|-------|
| Screwed or Flanged.....each | 20.00 | 20.00 | 30.00 | 40.00 |
| Distance, Center to Inlet or Outlet, Screwed..inches | 4½ | 4½ | 5 | 5¾ |
| Distance, Center to Inlet or Outlet, Flanged..inches | 4½ | 4½ | 5¾ | 6¾ |
| Diameter of Flanges..... | 6 | 6 | 7 | 7½ |

**STANDARD IRON BODY BRASS MOUNTED
GLOBE AND ANGLE VALVES**

Plain Pattern

GLOBE**B687****ANGLE****B688**

SCREWED AND FLANGED

| Size..... |inches | 2 | 2½ | 3 |
|------------------------|-------------|------|------|-------|
| Screwed | each | 5.40 | 7.35 | 9.80 |
| Flanged | " | 7.00 | 9.00 | 12.50 |
| Diameter Flanges | inches | 6 | 7 | 7½ |

Smaller sizes, special from factory.

Template for drilling, same as Companion Flanges, Standard. See index.

GLOBE AND ANGLE VALVES

With Jenkins Disc

B689, B689½

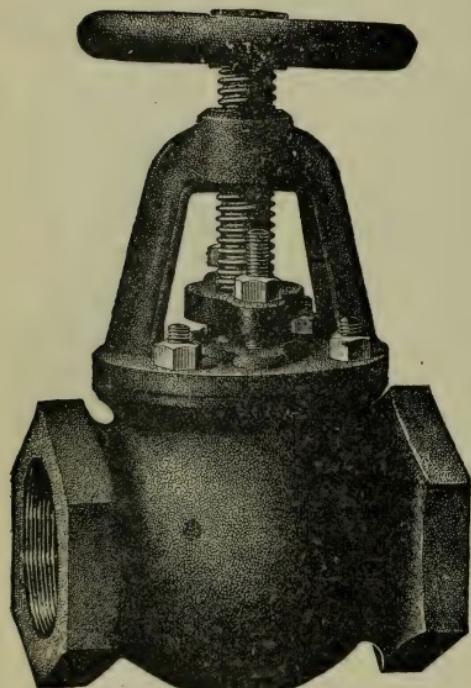
| Size..... |inches | 2 | 2½ | 3 |
|---------------|-------------|------|-------|-------|
| Screwed | each | 7.25 | 11.00 | 16.00 |
| Flanged | " | 8.50 | 13.00 | 18.00 |

Diameter of flanges same as above.

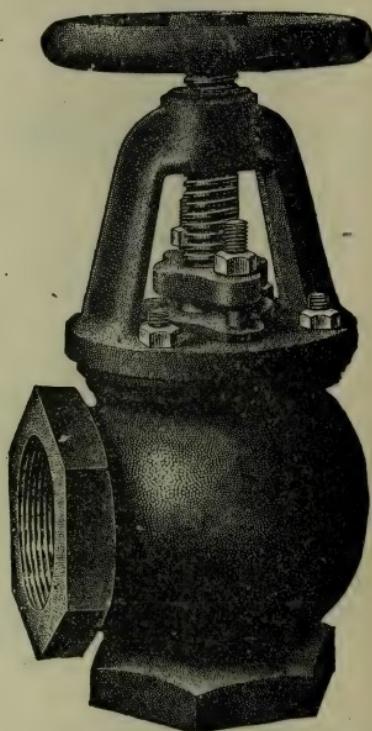
**STANDARD IRON BODY BRASS MOUNTED
GLOBE AND ANGLE VALVES**

Yoked Pattern

Screwed Ends

ANGLE**GLOBE**

B690



B691

SCREWED

| | | | | | | | |
|------------|--------|-------|-------|-------|-------|--------|--------|
| Size..... | Inches | 2 | 2½ | 3 | 3½ | 4 | 4½ |
| Price..... | Each | 7.00 | 9.00 | 12.50 | 15.25 | 19.00 | 24.00 |
| Size..... | Inches | 5 | 6 | 7 | 8 | 10 | 12 |
| Price..... | Each | 27.00 | 37.50 | 63.00 | 72.00 | 114.00 | 170.00 |

SCREWED GLOBE AND ANGLE VALVES YOKED

With Jenkins Disc

B0693 and B0694

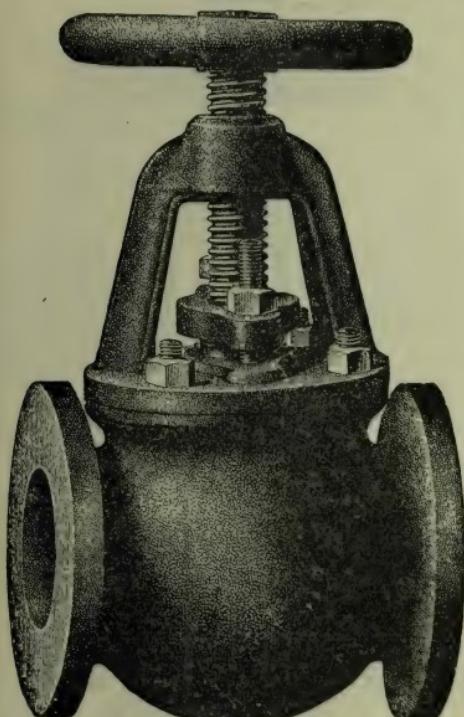
| | | | | | | | |
|------------|--------|-------|-------|-------|-------|--------|--------|
| Size..... | Inches | 2 | 2½ | 3 | 3½ | 4 | 4½ |
| Price..... | Each | 12.00 | 16.75 | 19.50 | 24.00 | 32.00 | |
| Size..... | Inches | 5 | 6 | 7 | 8 | 10 | 12 |
| Price..... | Each | 40.00 | 48.00 | 80.00 | 90.00 | 130.00 | 185.00 |

**STANDARD IRON BODY BRASS MOUNTED
GLOBE AND ANGLE VALVES**

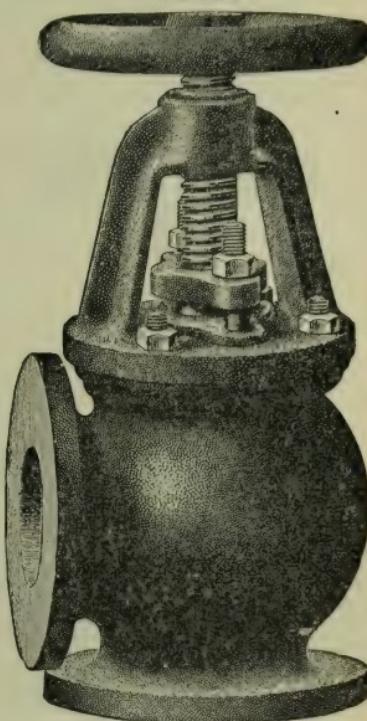
Yoked Pattern. Flanged Ends

GLOBE

ANGLE



B695



B696

FLANGED

| Size..... | Inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 |
|-----------------------|--------|-------|-------|--------|--------|--------|--------|--------|-------|
| Price..... | Each | 8.60 | 10.75 | 15.00 | 18.50 | 22.50 | 27.50 | 31.00 | 42.00 |
| Diam. of Flanges..In. | | 6 | 7 | 7½ | 8½ | 9 | 9½ | 10 | 11 |
| Size..... | Inches | 7 | 8 | 10 | 12 | *14 | *15 | *16 | |
| Price..... | Each | 68.00 | 77.00 | 123.00 | 187.00 | 350.00 | 350.00 | 475.00 | |
| Diam. of Flanges..In. | | 12½ | 13½ | 16 | 19 | 21 | 22½ | 23½ | |

* 14 inch, 15 inch, and 16 inch made to order only at special price.

Template for drilling same as Companion Flanges, Standard. See Index.

FLANGED GLOBE AND ANGLE VALVES YOKED

With Jenkins Disc

B0697 B0698

| Size..... | Inches | 2 | 2½ | 3 | 3½ | 4 | 4½ |
|------------|--------|-------|-------|-------|-------|--------|--------|
| Each | | | 14.00 | 18.50 | 21.50 | 26.00 | 34.00 |
| Size..... | Inches | 5 | 6 | 7 | 8 | 10 | 12 |
| Each | | 42.00 | 50.00 | 80.00 | 90.00 | 130.00 | 185.00 |

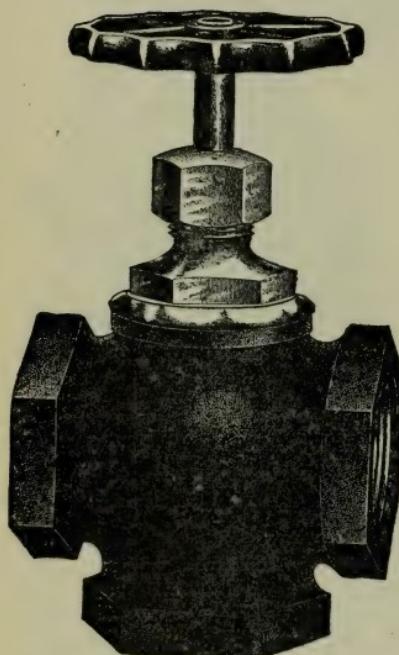
Diameter of flanges same as above.

**STANDARD IRON BODY, BRASS MOUNTED
CROSS VALVES**

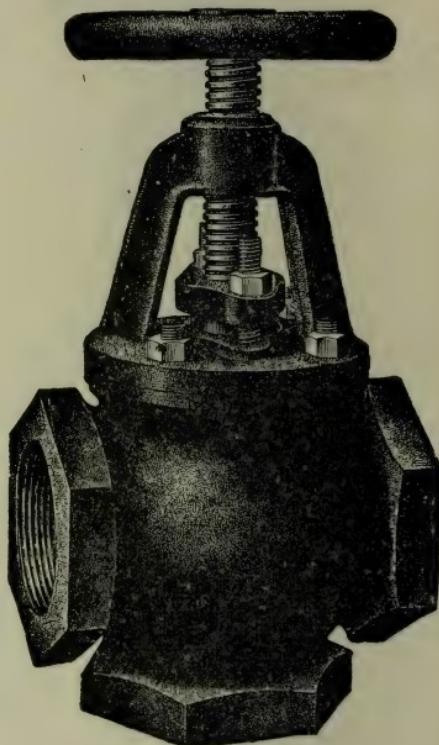
Screwed and Flanged

PLAIN PATTERN

YOKED PATTERN



B705



B706

| Size..... | inches | 2 | 2½ | 3 | 3½ | 4 | 4½ |
|-----------------------|---------------|------|------|-------|-------|-------|-------|
| B705 { | Screwed | each | 7.25 | 11.00 | 16.00 | .... | .... |
| | Flanged | " | 8.50 | 13.00 | 18.00 | .... | .... |
| B706 { | Screwed ..... | " | .... | .... | 20.00 | 23.50 | 30.65 |
| | Flanged ..... | " | .... | .... | 25.00 | 28.50 | 36.00 |
| Diameter Flanges..... | inches | .... | .... | 8½ | 9 | 9¼ | |

| Size..... | inches | 5 | 6 | 7 | 8 | 10 | 12 |
|-----------------------|---------------|----|-------|-------|-------|--------|--------|
| B706 { | Screwed | " | 35.25 | 47.25 | 78.00 | 92.00 | 162.00 |
| | Flanged | " | 41.00 | 54.00 | 85.00 | 100.00 | 175.00 |
| Diameter Flanges..... | inches | 10 | 11 | 12½ | 13½ | 16 | 19 |

Template for drilling same as Companion Flanges, Standard, see index.

CROSS VALVE B0708

With Jenkins Disc

| Size..... | inches | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 |
|-----------|---------------|------|-------|-------|-------|-------|-------|-------|
| Yoked { | Screwed..... | each | 16.00 | 21.00 | 26.00 | 30.00 | 42.00 | 45.00 |
| Pattern { | Flanged | " | 19.00 | 24.00 | 29.00 | 33.00 | 45.00 | 48.00 |

Diameter Flanges same as above.

FAIRBANKS ASBESTOS DISC

Iron Body, Brass Mounted

GLOBE, ANGLE, AND CROSS VALVES

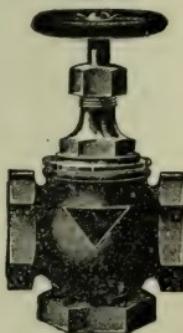
Plain Pattern

GLOBE

B709

ANGLE

B710

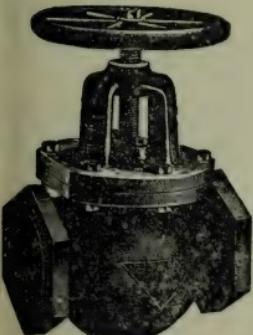
CROSS

B711

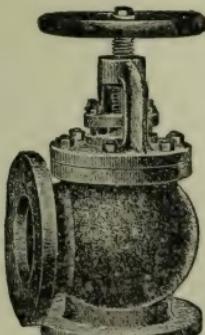
GLOBE, ANGLE, AND CROSS VALVES

| Size |inches | 1½ | 2 | 2½ | 3 | 3½ | 4 |
|-------------------------------|-------------|-------|-------|-------|-------|-------|-------|
| Globe and Angle, Screwed..... | each | 5.00 | 7.25 | 11.00 | 16.00 | 18.50 | 23.00 |
| " " " Flanged | " | 6.00 | 8.50 | 13.00 | 18.00 | 20.50 | 25.00 |
| Cross Valve, Screwed..... | " | 12.00 | 14.00 | 16.00 | 21.00 | 25.00 | 27.00 |
| " " " Flanged | " | 15.00 | 17.00 | 19.00 | 24.00 | 27.00 | 30.00 |
| Diameter Flanges..... |inches | 5 | 6 | 7 | 7½ | 8½ | 9 |

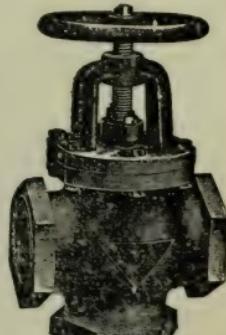
Yoked Pattern

GLOBE

B712

ANGLE

B713

CROSS

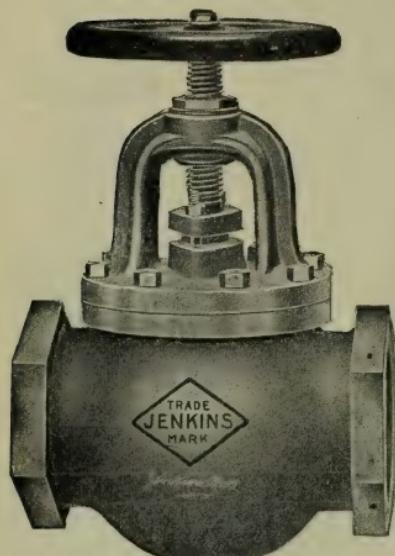
B714

GLOBE, ANGLE, CROSS, AND SAFETY VALVES

| Size... .inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 | 10 | 12 |
|------------------|-------|-------|-------|-------|-------|-------|-----|-----|------|------|------|------|
| Globe { Scr. ea. | 10.00 | 12.00 | 16.75 | 19.50 | 24.00 | 32.00 | 40. | 48. | 80. | 90. | 130. | 185. |
| & Ang. { Flg. " | 11.75 | 14.00 | 18.50 | 21.50 | 26.00 | 34.00 | 42. | 50. | 90. | 90. | 130. | 185. |
| Cross { Scr. " | 14.00 | 16.00 | 21.00 | 26.00 | 30.00 | 42.00 | 45. | 58. | .... | .... | .... | .... |
| Valve { Flg. " | 17.00 | 19.00 | 24.00 | 29.00 | 33.00 | 45.00 | 48. | 62. | .... | .... | .... | .... |
| Safety { Scr. " | 10.25 | 16.75 | 22.00 | 31.00 | 38.00 | 46.50 | 55. | 73. | .... | .... | .... | .... |
| Valve { Fig. " | 12.25 | 19.00 | 25.50 | 34.00 | 41.50 | 51.75 | 62. | 80. | .... | .... | .... | .... |

For Extra Discs, see B559. Flange diameters same as B695.

JENKINS BROS. IRON BODY VALVES
SCREWED GLOBE **FLANGED ANGLE**



B715



B716

| Size.....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Globe and Angle { Scr... | 10.00 | 12.00 | 16.75 | 19.50 | 24.00 | 32. | 40. | 48. | 80. | 90. | 121. | 130. | 185. |
| { Flg.... | 11.75 | 14.00 | 18.50 | 21.50 | 26.00 | 34. | 42. | 50. | 80. | 90. | 121. | 130. | 185. |
| *Without Yoke { Scr.... | 7.25 | 11.00 | 16.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| { Flg.... | 8.50 | 13.00 | 18.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Cross { Scr.... | 16.00 | 21.00 | 26.00 | 30.00 | 42. | 45. | 58. | 90. | 100. | ..... | ..... | ..... | ..... |
| Yoked { Flg.... | 19.00 | 24.00 | 29.00 | 33.00 | 45. | 48. | 62. | 90. | 100. | ..... | ..... | ..... | ..... |
| Safety { Scr..... | 11.00 | 17.00 | 22.00 | 31.00 | 38.00 | 47. | 55. | 73. | ..... | ..... | ..... | ..... | ..... |
| Valve { Flg..... | 13.00 | 19.00 | 25.50 | 34.00 | 42.00 | 52. | 62. | 80. | ..... | ..... | ..... | ..... | ..... |
| Globe, F. to F., Flg. | 7½ | 7½ | 9¼ | 10 | 11¾ | 12½ | 13¾ | 16 | 16¼ | 18½ | 20 | 21¼ | 24½ |
| Angle, C. " F., " | 3¾ | 4½ | 4¾ | 5% | 5% | 6¼ | 6½ | 8 | 8 | 9¾ | 10 | 10½ | 12½ |
| Diam. Flgs..... | 6 | 7 | 7½ | 8½ | 9 | 9¾ | 10 | 11 | 12½ | 13¾ | 15 | 16 | 19 |

For Jenkins Discs see B565.

Valves are suitable for 150 pounds pressure. When Steam or Hot Water pressure is over 100 pounds the special metallic disc is recommended. For Cold Water, Air or Gas the special soft composition disc is recommended.

*Jenkins Valves without Yoke are similar to B709 and B710.

Flanged Globe and Angle: 14-in., \$334.00; 16-in., \$400.00; 18-in., \$540.00; 20-in., \$620.00; 24-in., \$1,260.00.

Safeties are Cross or Angle pattern; if over 125 pounds requires special levers.

JENKINS BROS. GLOBE AND ANGLE VALVES

With Extra Heavy Diameter and Thickness of Flanges, for
150 Pounds Working Pressure

| Size.....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
|---------------------------|-------|-------|-------|-------|-------|-----|-----|-----|-----|------|------|------|------|
| Price .....each | 14.25 | 17.50 | 23.50 | 28.00 | 35.00 | 45. | 53. | 62. | 95. | 110. | 145. | 151. | 210. |
| Globe, F. to F.... | 8½ | 10 | 11¾ | 12½ | 13¾ | 14½ | 15½ | 17 | 18½ | 20 | 21¼ | 23 | 26 |
| Angle, C. to F.... | 4½ | 5 | 5¾ | 6¼ | 6¾ | 7½ | 7¾ | 8½ | 9½ | 10 | 10½ | 11½ | 13 |
| Diam. of Flgs.... | 6½ | 7½ | 8½ | 9 | 10 | 10½ | 11 | 12½ | 14 | 15 | 16 | 17½ | 20 |

JENKINS BROS.

IRON BODY, BRASS MOUNTED CHECK VALVES

HORIZONTAL, FLANGED

ANGLE, SCREWED



B717



B718

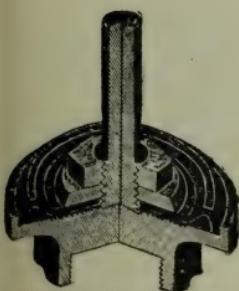
HORIZONTAL, ANGLE AND VERTICAL

| Size.....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 |
|----------------------------|-------|-------|-------|-------|--------|--------|--------|-------|--------|--------|
| Screwed..... | 8.00 | 11.00 | 14.00 | 17.00 | 20.00 | 25.00 | 30.00 | 40.00 | 65.00 | 80.00 |
| Flanged..... | 10.00 | 13.00 | 16.50 | 20.00 | 23.00 | 28.00 | 33.00 | 43.00 | 65.00 | 80.00 |
| Face to F. Hor., Flanged.. | 7 1/8 | 7 1/2 | 9 1/4 | 10 | 11 3/4 | 12 1/2 | 13 1/8 | 16 | 16 1/4 | 18 1/2 |
| Center to F. Ang., Flanged | 3 7/8 | 4 1/2 | 4 5/8 | 5 3/8 | 5 7/8 | 6 1/4 | 6 1/2 | 8 | 8 | 9 1/4 |
| Diam. Flanges.... | 6 | 7 | 7 1/2 | 8 1/2 | 9 | 9 1/4 | 10 | 11 | 12 1/2 | 13 1/2 |

Larger sizes quoted on application.

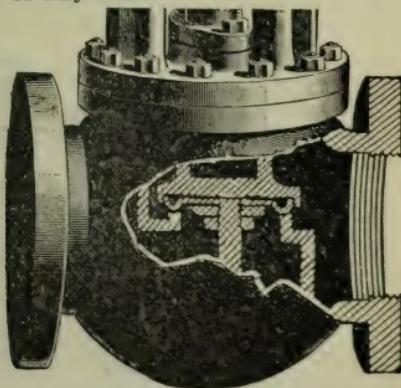
METALLIC SPRING DISCS

For Flat Seat Valves of any Make



Disc in Holder for Iron Body Valves

B719



Disc and Holder in Valve

When ordering state make of valve. We advise ordering holders with first order of discs, to insure perfect fit. For renewals order discs only.

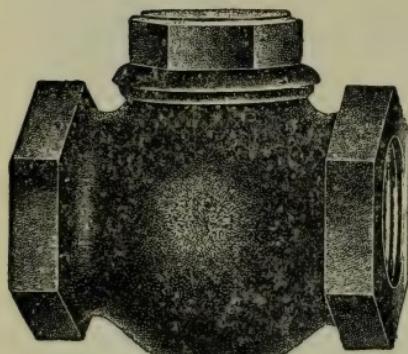
| Size Valve...inches | 3 1/2 | 4 | 4 1/2 | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
|---------------------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Disc only....each | 2.40 | 2.80 | 3.60 | 4.00 | 4.80 | 7.20 | 8.00 | 12.00 | 12.80 | 20.00 |
| " and Holder.. " | 6.10 | 7.75 | 10.00 | 13.75 | 15.60 | 24.80 | 27.60 | 40.00 | 44.50 | 66.80 |

For smaller sizes for brass valves see B555.

**STANDARD IRON BODY BRASS MOUNTED
CHECK VALVES**

HORIZONTAL Screwed and Flanged

ANGLE



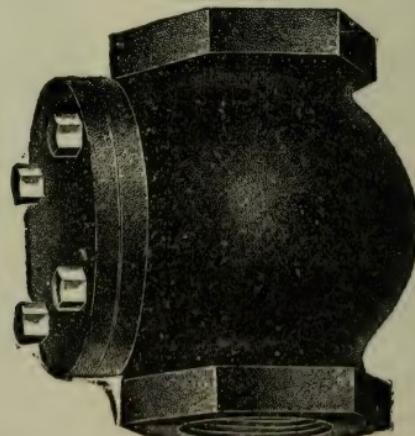
B725



B726

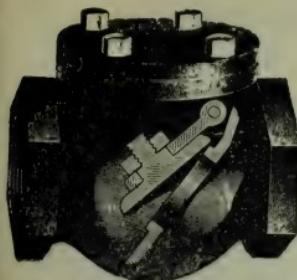
| Size | inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 |
|-----------------------------|--------|-------|-------|-------|--------|--------|--------|--------|
| Screwed..... | each | 3.60 | 6.50 | 8.90 | 12.25 | 14.25 | 19.00 | 22.00 |
| Flanged | " | 5.25 | 8.25 | 11.50 | 15.50 | 18.00 | 22.50 | 26.00 |
| Diameter of Flanges..inches | | 6 | 7 | 7½ | 8½ | 9 | 9¼ | 10 |
| Size | inches | 6 | 7 | 8 | 10 | 12 | 14 | 16 |
| Screwed..... | each | 30.00 | 45.00 | 57.00 | 105.00 | 155.00 | .... | .... |
| Flanged..... | " | 35.00 | 50.00 | 62.00 | 115.00 | 175.00 | 300.00 | 425.00 |
| Diameter of Flanges..inches | | 11 | 12½ | 13½ | 16 | 19 | 21 | 22¼ |

VERTICAL



B727

| Size..inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 |
|-------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Screwed. ea. | 7.00 | 9.50 | 12.50 | 17.00 | 21.00 | 30.00 | 33.00 | 40.00 | 62.00 | 73.00 |
| Flanged.. " | 8.75 | 11.50 | 15.00 | 20.00 | 25.00 | 33.50 | 37.00 | 45.00 | 67.00 | 78.00 |
| Diam.of Flg's,in. | 6 | 7 | 7½ | 8½ | 9 | 9¼ | 10 | 11 | 12½ | 13½ |



B730

**STANDARD
IRON BODY STRAIGHT-WAY
SWING CHECK VALVES**

With Brass Seat

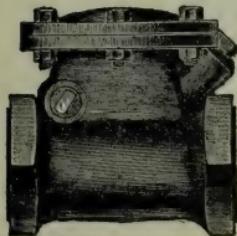
| Size inches | 2½ | 3 | 3½ | 4 | 5 | 6 |
|--------------------------------------|-------|-------|-------|-------|-------|-------|
| Screwed each | 15.00 | 18.00 | 24.00 | 27.00 | 38.00 | 48.00 |
| Flanged " | 17.00 | 21.00 | 27.00 | 30.00 | 42.00 | 52.00 |
| Bell End . . . . . " | ..... | ..... | ..... | 35.00 | 48.00 | 60.00 |
| Diameter of Flanges inches | 7 | 7½ | 8½ | 9 | 10 | 11 |

| Size inches | 7 | 8 | 10 | 12 | 14 | 16 |
|--------------------------------------|-------|-------|--------|--------|--------|--------|
| Screwed each | 62.00 | 75.00 | 125.00 | 200.00 | ..... | ..... |
| Flanged " | 67.00 | 80.00 | 135.00 | 220.00 | 350.00 | 475.00 |
| Bell End . . . . . " | ..... | 90.00 | 160.00 | 265.00 | ..... | 500.00 |
| Diameter of Flanges inches | 12½ | 13½ | 16 | 19 | 21 | 23½ |

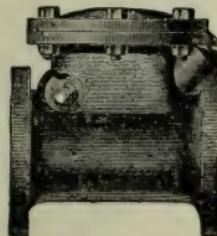
Swing Check Valves, screwed and flanged, for water, have leather discs; for steam, have brass discs. Hub End Swing Check Valves always have leather discs. If not so specified, screwed and flanged Swing Check Valves with brass will always be sent.

**PRATT & CADY IRON BODY STRAIGHT-WAY
SWING CHECK VALVES**

With Brass Seat and Rotating Disc



B731



B732

SCREWED, FLANGED, OR BELL END

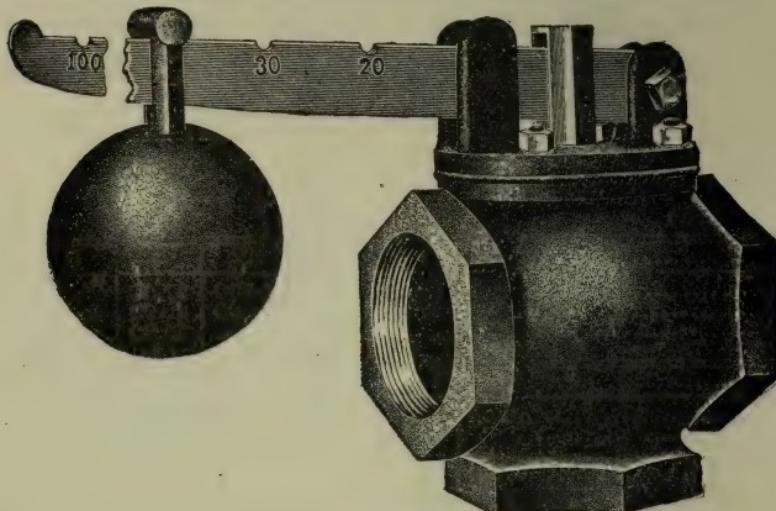
| Size inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 |
|-----------------------------------|-------|-------|-------|--------|--------|--------|--------|
| Price each | 6.25 | 10.00 | 12.00 | 16.00 | 18.00 | 21.50 | 25.00 |
| Diam. of Flanges inches | 6 | 7 | 7½ | 8½ | 9 | 9¼ | 10 |
| Face to Face Flanged " | 8¾ | 8½ | 8 | 9¾ | 10½ | 11¾ | 11¾ |
| Size inches | 6 | 7 | 8 | 10 | 12 | 14 | 16 |
| Price each | 32.00 | 41.00 | 50.00 | 104.00 | 152.00 | 289.00 | 334.00 |
| Diam. of Flanges inches | 11 | 12½ | 13½ | 16 | 19 | 21 | 23½ |
| Face to Face Flanged " | 13¾ | 14¾ | 15¾ | 19¾ | 22½ | 25 | 34 |

Can be furnished with brass, leather, or asbestos discs.

Can also be made Angle Pattern if desired.

STANDARD IRON BODY, LEVER SAFETY VALVES

Cross Pattern. Brass Mounted. Screwed and Flanged



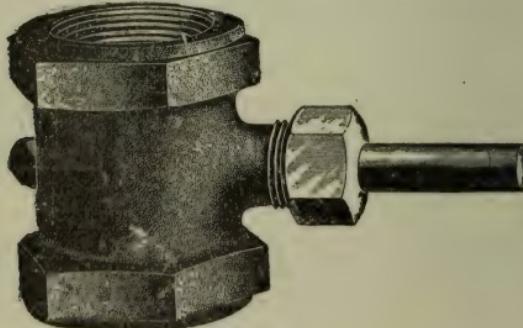
B735

| Size..inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 |
|--------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| Screwed..ea. | 7.80 | 13.25 | 17.25 | 23.00 | 28.75 | 34.50 | 41.50 | 57.75 | 93.50 | 132.00 |
| Flanged.. " | 10.25 | 16.00 | 21.50 | 27.50 | 34.00 | 40.00 | 48.00 | 65.00 | 100.00 | 140.00 |
| Diam.Flg.in. | 6 | 7 | 7½ | 8½ | 9 | 9¼ | 10 | 11 | 12½ | 13½ |

Same list applies to Cross and Angle Safety Valves.

IRON BODY BUTTERFLY VALVES

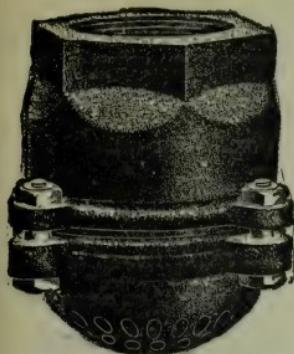
Brass Trimmed. Screwed and Flanged



B736

| Size..inches | 2 | 2½ | 3 | 3½ | 4 | 5 | 6 | 8 | 10 | 12 |
|--------------|------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| Screwed..ea. | 8.00 | 9.50 | 12.00 | 16.00 | 18.50 | 28.50 | 42.50 | ... | ... | ... |
| Flanged.. " | 9.50 | 11.50 | 15.00 | 19.00 | 22.00 | 32.00 | 47.00 | 90.00 | 125.00 | 160.00 |
| Diam.Flg.in. | 6 | 7 | 7½ | 8½ | 9 | 10 | 11 | 13½ | 16 | 19 |

Price does not include a lever.



IRON FOOT VALVES

WITH STRAINER

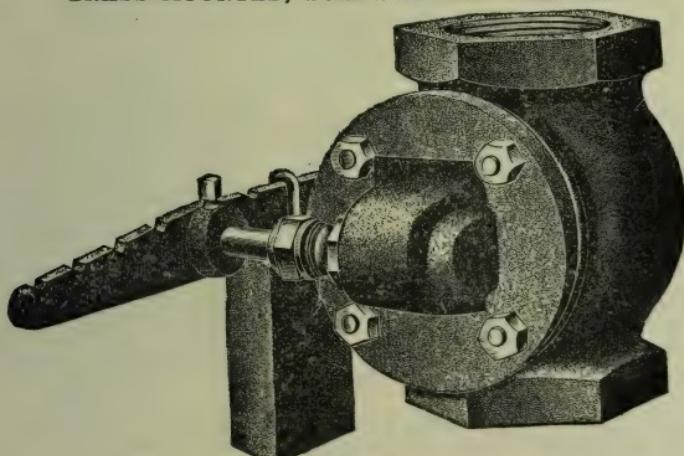
SCREWED AND FLANGED

B737

| Size..... | Inches | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ |
|-------------------|--------|---------------|----------------|----------------|----------------|-----------------|-----------------|-------|----------------|
| Screwed..... | Each | 1.15 | 1.30 | 1.40 | 1.90 | 2.40 | 3.30 | 3.90 | 5.60 |
| Size..... | Inches | 4 | $4\frac{1}{2}$ | 5 | 6 | 7 | 8 | 10 | 12 |
| Screwed..... | Each | 7.30 | 10.50 | 11.25 | 14.75 | 35.00 | 41.00 | 64.00 | 100.00 |
| Flanged..... | " | 9.50 | 13.00 | 14.00 | 17.50 | 38.00 | 45.00 | 70.00 | 112.00 |
| Diam. Flanges.... | In. | 9 | $9\frac{1}{4}$ | 10 | 11 | $12\frac{1}{2}$ | $13\frac{1}{2}$ | 16 | 19 |

14-inch Flanged Foot Valve, \$150.00; 16-inch Flanged Foot Valve, \$200.00.

STANDARD IRON BODY BACK PRESSURE VALVES BRASS MOUNTED, SCREWED AND FLANGED

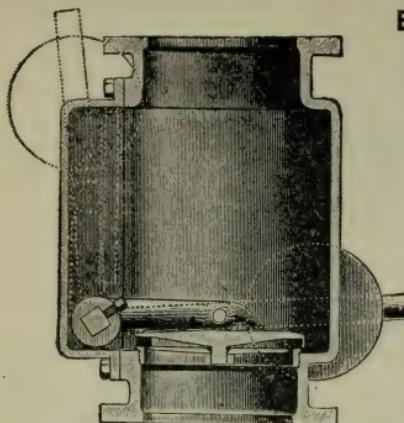


B738

| Size..... | Inches | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{4}$ | 4 | $4\frac{1}{2}$ | 5 |
|----------------------|--------|----------------|-----------------|-----------------|----------------|----------------|----------------|-----------------|-------|
| Screwed..... | Each | 9.00 | 11.00 | 13.00 | 15.00 | 19.00 | 22.50 | 28.50 | 33.50 |
| Flanged..... | " | ..... | ..... | 17.50 | 22.00 | 26.00 | 32.00 | 37.00 | ..... |
| Diam. Flanges.Inches | ..... | 6 | 7 | $7\frac{1}{2}$ | $8\frac{1}{2}$ | 9 | $9\frac{1}{4}$ | 10 | ..... |
| Size..... | Inches | 6 | 7 | 8 | 10 | 12 | 14 | 16 | ..... |
| Screwed..... | Each | 43.00 | 70.00 | 85.00 | 120.00 | 180.00 | ..... | ..... | ..... |
| Flanged..... | " | 47.00 | 75.00 | 90.00 | 130.00 | 200.00 | 350.00 | 475.00 | ..... |
| Diam. Flanges.Inches | ..... | 11 | $12\frac{1}{2}$ | $13\frac{1}{2}$ | 16 | 19 | 21 | $23\frac{1}{2}$ | ..... |

Standard Back Pressure Valves—one size larger than the exhaust pipe should be used, and bushed to fit the pipe. This makes a more satisfactory job.

In places where pressure changes often or rapidly, a balanced valve should be used. See succeeding pages.



EXCELSIOR STRAIGHT-WAY BACK PRESSURE VALVE

Screwed and Flanged

B740

Used horizontal, vertical, or at any angle.
Noiseless, simple, and full area of pipe size.

Can be used as free exhaust on a condensing plant.

Can be furnished arranged for water seal when desired for use in vertical position only.

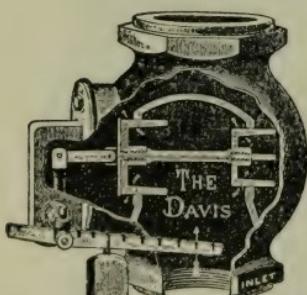
*Larger sizes quoted on application.

| Size | Inches | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 |
|-----------------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| Screwed..... | Each | 15.00 | 18.00 | 21.00 | 24.00 | 30.00 | 33.00 | 43.00 | 57.00 |
| Flanged..... | " | 16.00 | 19.00 | 23.00 | 25.00 | 31.00 | 34.50 | 44.50 | 57.00 |
| Diameter Flanges..... | Inches | 7 | 7½ | 8½ | 9 | 9¼ | 10 | 11 | 12½ |

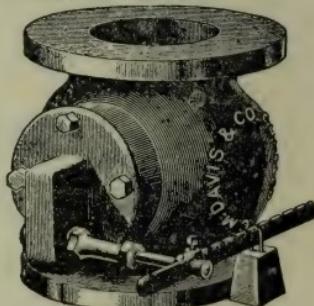
| Size | Inches | 8 | 9 | 10 | 12 | 14 | 16 | 18 | 20 |
|-----------------------|--------|-------|-------|--------|--------|--------|--------|--------|--------|
| Flanged..... | Each | 71.00 | 88.00 | 102.00 | 143.00 | 255.00 | 310.00 | 380.00 | 450.00 |
| Diameter Flanges..... | Inches | 13½ | 15 | 16 | 19 | 21 | 23½ | 25 | 27½ |

DAVIS NOISELESS BACK PRESSURE VALVE

For Non-condensing Engines only. Patented



B741



B742

SCREWED OR FLANGED

| Size..... | Inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 |
|----------------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Price..... | Each | 14.00 | 16.00 | 18.00 | 22.00 | 25.00 | 30.00 | 40.00 | 60.00 | 80.00 | 100.00 |
| Diameter Flanges In. | | 6 | 7 | 7½ | 8½ | 9 | 9¼ | 10 | 11 | 12½ | 13½ |

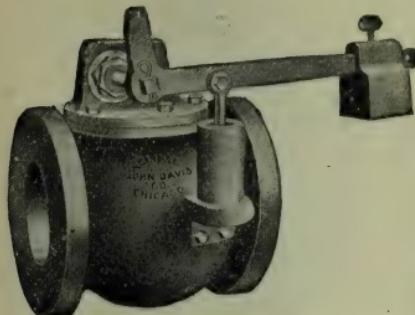
| Size..... | Inches | 9 | 10 | 12 | 14 | 15 | 16 | 18 | 20 | 22 | 24 |
|----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| Price..... | Each | 120.00 | 145.00 | 220.00 | 345.00 | 400.00 | 465.00 | 600.00 | 750.00 | 900.00 | 1050. |
| Diameter Flanges In. | | 15 | 16 | 19 | 21 | — | 23½ | 25 | 27½ | — | — |

Sizes from 2 to 12 inches inclusive have either screwed or flanged ends; 14 inches and over have flanged ends only.

These valves may be placed in a horizontal position with the cover on the top, bottom, or side, in a vertical position, or in an oblique position. The most desirable for sensitive regulation, however, is horizontal with the cover on top.

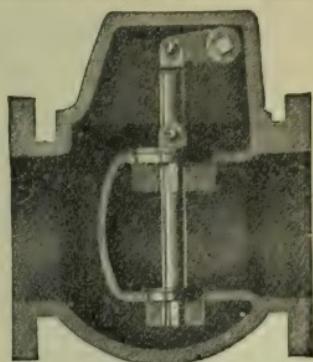
Vacuum System Back Pressure Valves

When Davis Valves are to be used on steam heating systems at, or below atmospheric pressure, the discs may be bevel-seated and specially ground, when so ordered, and the valve provided with a counter-balance lever to permit of closer adjustment.

ECLIPSE PNEUMATIC BACK PRESSURE VALVES

B743

Horizontal
or
Vertical
Screwed or
Flanged

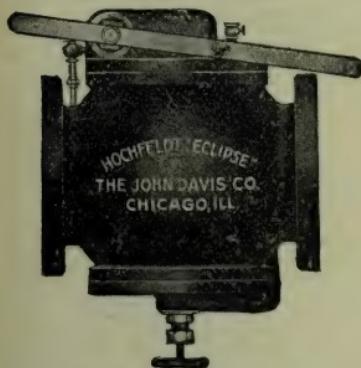


Sectional View Horizontal Pattern

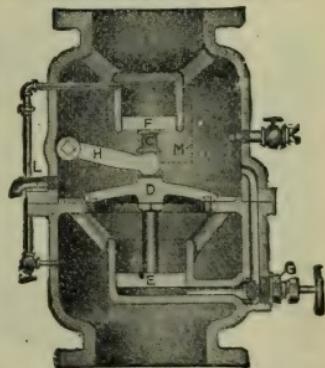
| Size..... |inches | 2 | 2½ | 3 | 4 | 5* | 6 |
|-----------------------|-------------|-------|-------|-------|-------|-------|-------|
| Price | each | 14.00 | 16.00 | 18.00 | 25.00 | 40.00 | 60.00 |
| Diameter Flanges..... | inches | 6 | 7 | 7½ | 9 | 10 | 11 |
| Face to Face..... | " | 7½ | 7½ | 9¾ | 10 | 11¼ | 12 |

Larger sizes use Hochfeldt "Eclipse" Valves.

These valves are two seated and provided with air cushion, which prevents any hammering, and makes it a noiseless valve. The valves are especially adapted for exhaust pipes of non-condensing engines. Specify whether valves are to be used in a horizontal or vertical position. To operate slow, fill dash pot with cylinder oil

THE HOCHFELDT "ECLIPSE" BACK PRESSURE VALVE

For Condensing
and Non-condens-
ing Plants



Flanged only

B745.—Horizontal

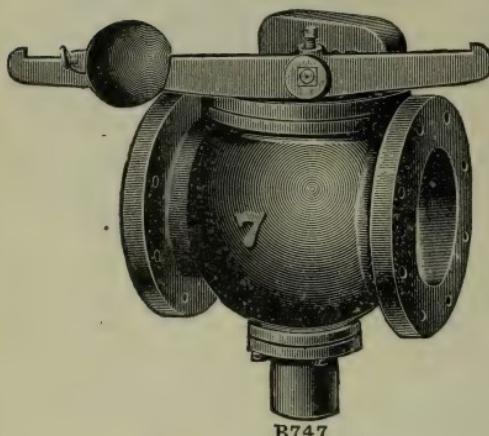
(Except 4 and 5 in. Horizontal, can also be furnished Screwed.)

| Size |inches | 4 | 5 | 6 | 7 | 8 | 9 |
|-----------------------|-------------|--------|--------|--------|--------|--------|--------|
| Price..... | each | 40.00 | 55.00 | 75.00 | 100.00 | 130.00 | 200.00 |
| Diameter Flanges..... | inches | 9 | 10 | 11 | 12½ | 13¼ | 15 |
| Size..... |inches | 10 | 12 | 14 | 16 | 18 | 20 |
| Price | each | 200.00 | 275.00 | 345.00 | 465.00 | 600.00 | 750.00 |
| Diameter Flanges..... | inches | 16 | 19 | 21 | 23½ | 25 | 27½ |

This valve can be used for a non-condensing plant, or, by closing the controlling valve, it can be converted into a single seated valve for a condensing plant, the lower piston acting as a dash pot. For condensing plants, these valves are usually installed in a branch leading from the main exhaust pipe.

KIELEY NOISELESS BACK PRESSURE VALVES

**COMPOSITE SEMI-BALANCED BACK
PRESSURE VALVE**
Horizontal Pattern
110 Style



B747

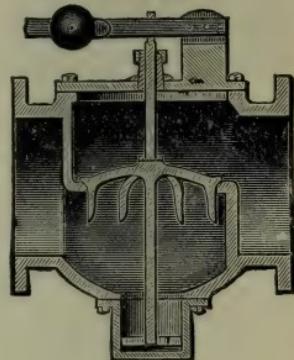
Sizes 2 to 14 inch

B747 is suitable where a back pressure of more than 5 pounds is desired to be maintained.

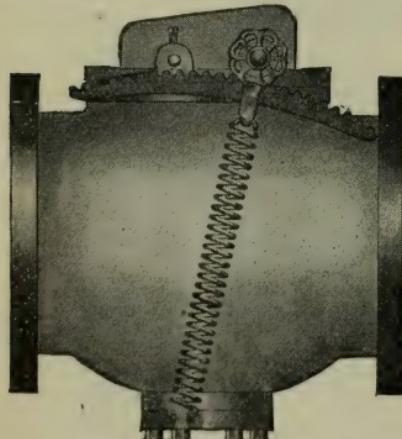
**SINGLE SEATED BACK
PRESSURE VALVE FOR
VACUUM SYSTEMS**

Sectional View, Horizontal Pattern

109 Style



B748



**KIELEY SPRING-WEIGHTED BACK
PRESSURE VALVE AND EXHAUST OR
ATMOSPHERIC RELIEF VALVE**

B749

For Horizontal pipe 111 style.

For Vertical pipe 112 style.

Sizes 2 to 24 inch.

Specify whether valve is to be used as a Back Pressure Valve or an Atmospheric Relief Valve.

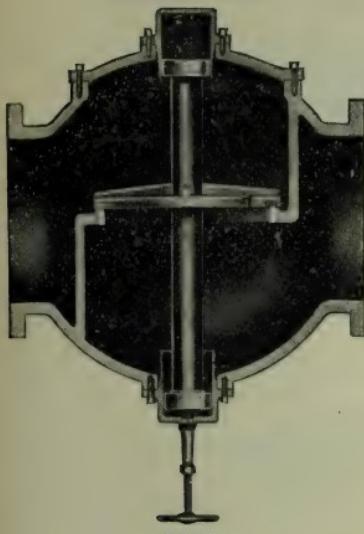
We strongly recommend that Back Pressure Valves be used in horizontal positions where conditions will possibly permit.

Screwed and Flanged 4-inch and smaller. Larger sizes Flanged only.

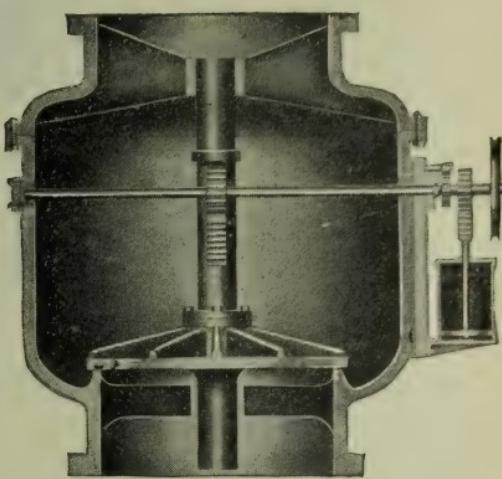
| Size ..Inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| Price ....ea. | 20.00 | 24.00 | 30.00 | 35.00 | 40.00 | 45.00 | 55.00 | 75.00 | 100.00 | 130.00 |
| Diam. Flg. In. | 6 | 7 | 7½ | 8¼ | 9 | 9¼ | 10 | 11 | 12½ | 13½ |
| Size ..Inches | 9-10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | ..... | ..... |
| Price ....ea. | 200. | 275. | 345. | 465. | 600. | 750. | 900. | 1050. | ..... | ..... |
| Diam. Flg. In. | 15-16 | 19 | 21 | 23½ | 25 | 27½ | ..... | ..... | ..... | ..... |

Larger sizes quoted on application.

In ordering it is especially important that we have particulars of service upon which valve is to be used.

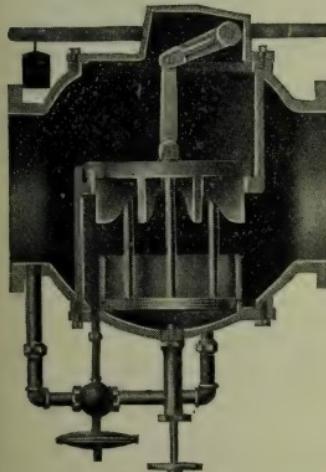
DAVIS AUTOMATIC RELIEF VALVES**HORIZONTAL**

B751

VERTICAL

B752

The Davis Automatic Relief Valves are designed for use with condensing engines to relieve direct to the atmosphere any pressure which may accumulate in the condenser, if for any reason the vacuum is lost.



B753

**DAVIS AUTOMATIC COMBINATION
BACK PRESSURE AND
RELIEF VALVE****Patented**

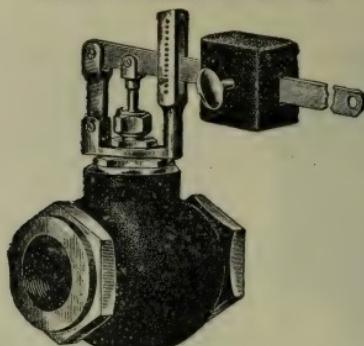
Is either a semi-balanced Noiseless Back Pressure Valve or an Automatic Atmospheric Relief Valve for Condensers, and changes from one condition to another automatically.

May be used in either Horizontal or Vertical position, preferably horizontal, length face to face in Vertical position being same as Horizontal listed below.

Price List for Relief, also Combination, Valves.

| Size.....in. | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 30 |
|------------------------|-------|------------------|------------------|-----|-----|------------------|------------------|------------------|------------------|------|------------------|
| Price .....ea. | \$100 | 170 | 270 | 335 | 415 | 500 | 584 | 670 | 917 | 1170 | 2000 |
| Face to F., Hori...in. | 16 | 20 | 24 | 29 | 32 | 36 $\frac{1}{4}$ | 39 $\frac{3}{4}$ | 43 $\frac{1}{4}$ | 46 $\frac{1}{2}$ | 52 | 60 |
| Face to F., Vert...“ | 14 | 16 | 16 $\frac{1}{2}$ | 21 | 24 | 26 | 26 | 36 | 39 | 42 | 52 |
| Diam. Fl....“ | 11 | 13 $\frac{1}{2}$ | 16 | 19 | 21 | 23 $\frac{1}{2}$ | 25 | 27 $\frac{1}{2}$ | 29 $\frac{1}{2}$ | 32 | 38 $\frac{3}{4}$ |

26 inch \$1420 list; 28 inch \$1600 list.

BALANCED VALVES**WITH WEIGHTED LEVER**

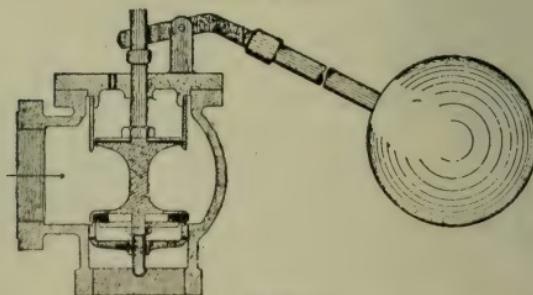
B754

For use in Connection with Steam, Air, Gas, Water, and other Fluids

| IRON BODY, BRASS MOUNTED | | | | | | | | | | | | | |
|--------------------------|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Size..... |inches | 1½ | 2 | 2½ | 3 | 3½ | 4 | 5 | 6 | 7 | 8 | 10 | 12 |
| Each | | 11. | 14. | 19. | 25. | 30. | 35. | 45. | 55. | 65. | 75. | 90. | 130. |

Valves up to and including 1½ inch have a swivel-head which will permit the shifting of the lever to any direction. Larger valves can be equipped with swivel-heads when so ordered.

Sizes 1½ inches have screwed ends only; from 2 to 6 inches inclusive have either screwed or flanged ends; 7 inches and over have flanged ends only.

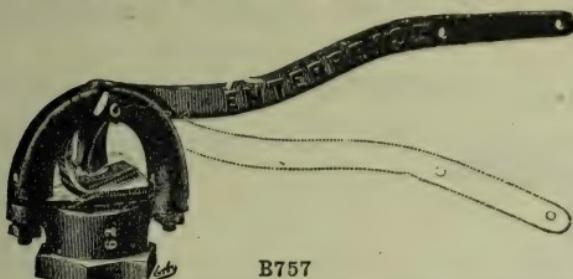
PERFECTION BALANCED TANK VALVE**WITH FLOAT**

B755

| Size.....inches | 1 | 1½ | 2 | 2½ | 3 | 4 | 5 | 6 |
|-----------------|-------|-------|-------|-------|-------|-------|-------|--------|
| With Float..... | 10.00 | 15.00 | 20.00 | 25.00 | 35.00 | 50.00 | 80.00 | 110.00 |

These valves are made of brass, sizes 1 inch to 3 inches, inclusive. The 4-inch to 6-inch sizes are of cast-iron, screwed pattern with brass trimmings.

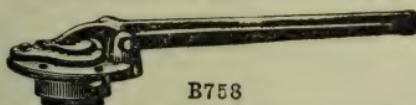
The valve is connected to the end of delivery pipe, with inlet on side of valve, and a bush pipe is taken from valve outlet to about 2 feet below highest water level in tank. The valve is then ready to operate on high or low pressure.

ENTERPRISE FLOAT VALVE

B757

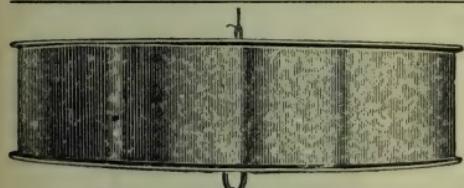
| Size..... | inches | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|-----------|--------|---------------|------|----------------|----------------|------|----------------|-------|
| Iron..... | each | 1.25 | 1.38 | 1.50 | 3.00 | 5.00 | 7.50 | 10.00 |

By reversing the lever, a perfect working outlet valve is had

COMMON FLOAT VALVE

B758

| Pipe Size..... | inches | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ |
|----------------|--------|---------------|-----|----------------|
| Iron..... | each | .80 | .80 | 1.00 |

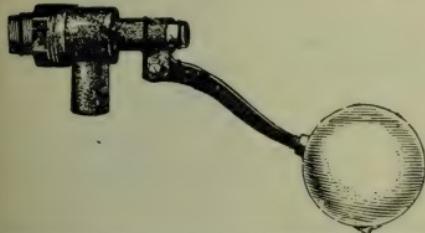
**GALVANIZED FLAT FLOATS**

For Float Valves

B759

| | | | | | |
|----------------------------|------|------|----------------------------|------|------|
| 8 inches in Diameter | each | 1.25 | \|\| 12 inches in Diameter..... | each | 2.00 |
|----------------------------|------|------|----------------------------|------|------|

Larger Sizes Special.

**COMPRESSION BALL COCK**

Brass

B762

Float balls are extra.

| Size..... | inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|----------------------|--------|---------------|---------------|------|----------------|----------------|-------|----------------|-------|
| Cock and Lever | each | 1.20 | 2.00 | 3.00 | 5.00 | 7.50 | 14.20 | 29.20 | 33.35 |

COPPER BALL FLOATS

| Diameter..... | inches | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 12 | 15 | 20 |
|---------------|-----------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| Light..... | per dozen | 9.00 | 18.00 | 27.00 | 36.00 | 48.00 | 60.00 | ... | ... | ... | ... |
| Heavy | " | 23.00 | 27.00 | 34.00 | 49.00 | 64.00 | 79.00 | 105.00 | 168.00 | 342.00 | 420.00 |

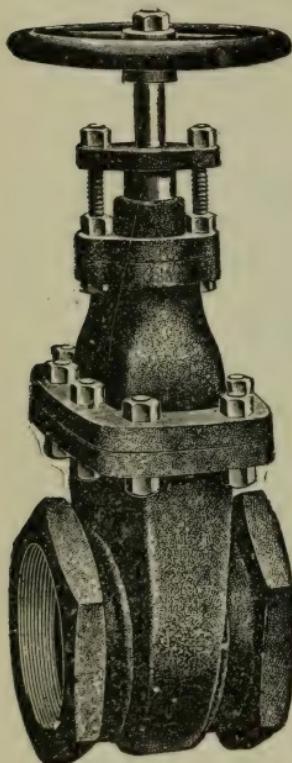
Light Floats are for open tanks. The Heavy Floats will stand heavy pressures, for steam traps, etc.

**STANDARD IRON BODY STRAIGHT-WAY
GATE VALVES**

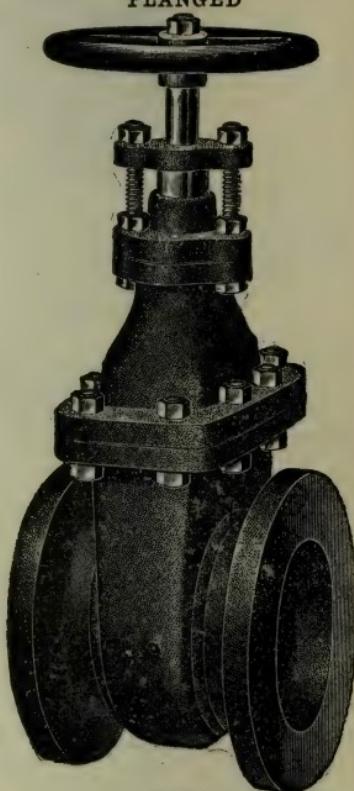
BRASS TRIMMINGS

SCREWED

FLANGED



B770



B771

SCREWED AND FLANGED

| | | | | | | | | |
|-------------------------|-------|-------|-------|-------|-------|--------|--------|--------|
| Size.....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 |
| Each..... | 10.00 | 12.00 | 15.00 | 18.00 | 20.00 | 23.00 | 25.00 | 30.00 |
| Diam. Flanges....inches | 6 | 7 | 7½ | 8½ | 9 | 9¼ | 10 | 11 |
| Size.....inches | 7 | 8 | 9 | 10 | 12 | 14 | 15 | 16 |
| Each..... | 45.00 | 55.00 | 80.00 | 90.00 | 125. | ... | ... | ... |
| " Flanged only..... | ... | ... | ... | ... | ... | 190.00 | 190.00 | 275.00 |
| Diam. Flanges....inches | 12½ | 13½ | 15 | 16 | 19 | 21 | 22¼ | 23½ |
| Size.....inches | 18 | 20 | 22 | 24 | 30 | 36 | .... | .... |
| Flanged only.....each | 375. | 425. | 525. | 600. | 1200. | .... | .... | .... |

These valves have stationary stems and open to the left.

ALL IRON VALVES

For Gas, Acids, etc. Use above price list. Discount quoted on application.

CRANE FERROSTEEL VALVES

Use above list prices. Discount quoted on application.

**OUTSIDE SCREW AND
YOKE, FLANGED**



B772

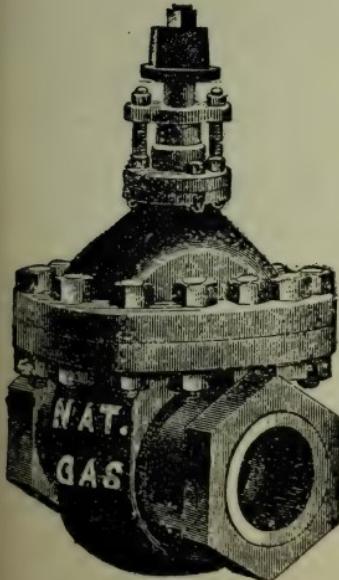
**IRON BODY
STRAIGHT WAY GATE VALVES**

Brass Trimmings

SCREWED AND FLANGED

| Inches. | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 |
|-------------|--------|--------|--------|--------|--------|---------|--------|
| Each .. | 20.00 | 23.00 | 28.00 | 33.00 | 40.00 | 46.00 | 55.00 |
| Flgs..ins. | 7 | 7½ | 8½ | 9 | 9¼ | 10 | 11 |
| Inches. | 7 | 8 | 9 | 10 | 12 | 14 | 15 |
| Each .. | 70.00 | 90.00 | 115.00 | 135.00 | 170.00 | 240.00 | 240.00 |
| Flgs..ins. | 12½ | 13½ | 15 | 16 | 19 | 21 | 22¼ |
| Inches. | 16 | 18 | 20 | 22 | 24 | 30 | 36 |
| Each .. | 350.00 | 475.00 | 550.00 | 650.00 | 750.00 | 1400.00 | ..... |
| Flgs.. ins. | 23½ | 25 | 27½ | 29½ | 32 | 38¾ | 45¾ |

NOTE.—The spindle moving in and out of this form of outside screw and yoke valve indicates whether valve is open, partly open, or shut.

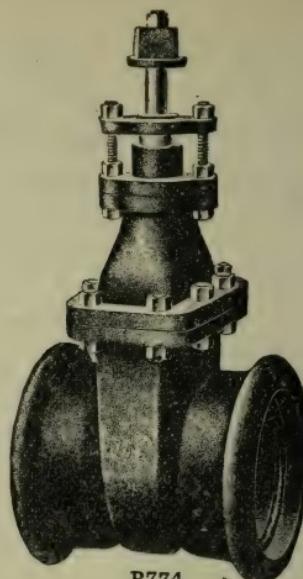


B773

**NATURAL GAS
ALL IRON GATE VALVE**

**SEE
GAS GOODS**

D1819

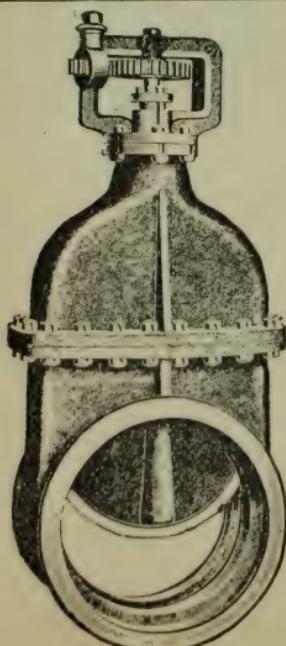
HUB ENDSTATIONARY STEM
WITH NUT**WATER GATE**IRON BODY BRASS
MOUNTED

B774

| | | | | | | | | |
|-------------------|------|------|------|--------|--------|--------|--------|-------|
| Size.....inches | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 10 |
| Each..... | 10. | 15. | 20. | 25. | 30.00 | 45.00 | 55.00 | 90.00 |
| Size.....inches | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 30 |
| Each..... | 125. | 190. | 275. | 375. | 425.00 | 525.00 | 600.00 | 1200. |
| With By-pass..... | 265. | 350. | 450. | 525.00 | 625.00 | 725.00 | 1400. | |

These valves can be furnished special with spigot ends or with flange one end. Can be furnished all iron for gas or acids.

Have stationary stems, open to the left; can be made to open to right.


**BRASS MOUNTED
IRON BODY GATE VALVE**

With Spur Gear

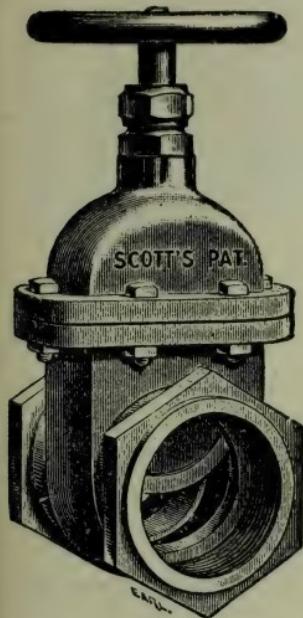
B774½

Price with either Spur or Bevel Gear, either Hub or Flange Ends

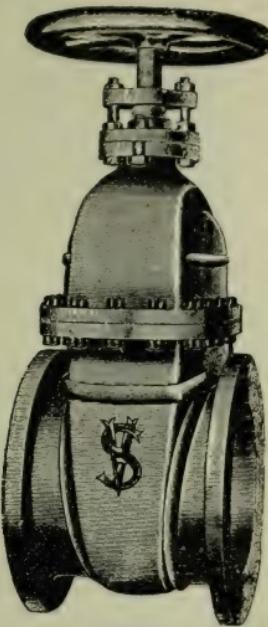
| | | | | | | |
|-------------------|------|------|------|------|------|-------|
| Size.....inches | 16 | 18 | 20 | 22 | 24 | 30 |
| Each..... | 375. | 475. | 550. | 650. | 725. | 1400. |
| With By-pass..... | 450. | 550. | 650. | 750. | 850. | 1600. |

**SCOTT STANDARD IRON BODY STRAIGHT WAY
GATE VALVES**

Bronze Mounted,
Stationary Stem



B775



B776

Sizes 6-inch and smaller have brass packing nut.
Sizes 7-inch and larger have gland packing box.

| Size.....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 |
|----------------------------------|-------|-------|-------|--------|--------|--------|--------|
| Screwed and Flanged..... | 10.00 | 12.00 | 15.00 | 18.00 | 20.00 | 23.00 | 25.00 |
| With Outside Screw and Yoke..... | ..... | 20.00 | 23.00 | 28.00 | 33.00 | 40.00 | 46.00 |
| Flanged Face to Face..... | 6 | 6¾ | 7¾ | 8⅓ | 9 | 9⅓ | 9½ |
| Diam. Flanges..... | 6 | 7 | 7½ | 8½ | 9 | 9¼ | 10 |
| Size.....inches | 6 | 7 | 8 | 9 | 10 | 12 | 14 |
| Screwed and Flanged..... | 30.00 | 45.00 | 55.00 | 80.00 | 90.00 | 125.00 | 190.00 |
| With Outside Screw and Yoke..... | 55.00 | 70.00 | 90.00 | 115.00 | 135.00 | 170.00 | 240.00 |
| Flanged Face to Face | 11 | 11½ | 12¼ | 13 | 13¾ | 14¾ | 17¾ |
| Diam. Flanges | 11 | 12½ | 13½ | 15 | 16 | 19 | 21 |

Flanged only, Stationary Stem: 16-in., \$275; 18-in., \$375; 20-in., \$425.

Flanged only, Outside Screw and Yoke: 14-in., \$240.00; 16-in., \$350.00;
18-in., \$475.00; 20-in., \$550.00.

SCOTT LIGHT PRESSURE SINGLE DISC VALVE—B777

For 40 Pounds Pressure. Flange or Hub End

Disc Made of Cast Iron, with Bronze Ring to Face of Seat

| Size.....inches | 6 | 8 | 10 | 12 | 14 | 16 |
|-----------------|--------|--------|--------|--------|--------|--------|
| Each..... | 24.00 | 45.00 | 70.00 | 90.00 | 115.00 | 150.00 |
| Size.....inches | 18 | 20 | 22 | 24 | 30 | 48 |
| Each | 185.00 | 210.00 | 275.00 | 315.00 | 475.00 | ..... |

Diameter Flanges and Drilling Template, see "Companion Flanges, Standard," Index.

**PRICE LISTS OF SPECIAL STANDARD
IRON BODY, BRONZE MOUNTED GATE VALVES**

JENKINS BROS. GATES

With Stationary Stem and Bronze Seat

| Size inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
|-------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| Screwed.....each | 8.00 | 12.00 | 15.00 | 18.00 | 21.00 | 29.00 | 30.00 | 36.00 | 50.00 | 62.00 | 71.00 | 85.00 | 120. |
| Flanged..... " | 9.00 | 13.00 | 16.00 | 19.00 | 22.50 | 31.00 | 32.00 | 38.00 | 50.00 | 62.00 | 71.00 | 85.00 | 120. |
| " Face to F., in. | 6 | 7 | 7½ | 7¾ | 8½ | 8¾ | 9½ | 10 | 11 | 12½ | 13¾ | 14¼ | 14¾ |

FAIRBANKS GATES

Bronze Seat and Bronze Faced Wedge. Screwed or Flanged

| Size inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|
| Stationary Stem, ea. | 7.50 | 10.75 | 14.00 | 18.25 | 22.00 | 25.00 | 27.00 | 34.00 | 41.00 | 51.50 | 63. | 73. | 100. |
| O. Scr. & Yoke.... " | 16.50 | 22.75 | 26.00 | 31.75 | 36.50 | 44.00 | 51.00 | 61.00 | 71.00 | 91.00 | 105. | 124. | 154. |
| Flanged. Face to F., inch. | 6½ | 7¾ | 8¼ | 9 | 9½ | 9¾ | 10½ | 10¾ | 11 | 11½ | 12 | 12½ | 14 |

Flanged, Stationary Stem: 14-inch, \$168.00; 16-inch, \$223.00. Outside Screw and Yoke: 14-inch, \$232.00; 16-inch, \$300.00.

Stationary Stem Valves 3½-inch and smaller have screwed packing nut.

CHAPMAN (LIST NO. 24) GATE

Bronze Mounted, with Babbit Metal Seat. For 150 Pounds Water Pressure, or 80 Pounds (325 Degrees) Steam

| Size.....inches | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| Inside { Screwed each | 8.49 | 10.85 | 13.00 | 15.75 | 18.00 | 20.75 | 23.75 | 33.00 | 42.00 | 52.50 | 62.00 | 85. |
| Stem { Flanged " | 8.75 | 11.25 | 13.50 | 16.00 | 17.50 | 20.50 | 25.00 | 31.50 | 40.00 | 49.00 | 59.00 | 77. |
| O. Scr. & { Screwed " " | 14.00 | 17.00 | 21.00 | 24.50 | 28.00 | 31.00 | 38.50 | 46.00 | 59.00 | 69.00 | 82.50 | 105. |
| Yoke { Flanged " " | 14.50 | 17.25 | 21.50 | 24.75 | 27.75 | 31.00 | 38.00 | 44.75 | 57.50 | 66.50 | 80.00 | 97. |
| Flanged, Face to F...inch. | 7¾ | 8½ | 8¾ | 9¼ | 9½ | 9¾ | 10½ | 10¾ | 10¾ | 11½ | 12½ | 12½ |

If with By-pass, prices and dimensions are special.

LUDLOW GATES

Iron Body, Bronze Mountings

Double Gate (List No. 5) 6-inch and less for 100 Pounds Steam Pressure, 7-inch and Larger for 85 Pounds Steam Pressure. Double Gate (List No. 4) for 75 Pounds Steam. Single Gate (List No. 1) Low Steam Pressure or 100 Pounds Water

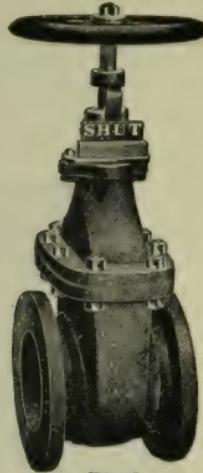
| Size.....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 | 10 | 12 |
|--------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| List { Stationary { Scr....ea. | ..... | ..... | 15.00 | 16.50 | 19.00 | 23.00 | 25.00 | 32.50 | 38.00 | 48.00 | 70.00 | 88.00 |
| No. 5 { Stem { Fig. " " | ..... | ..... | 16.00 | 17.50 | 20.00 | 23.50 | 25.50 | 33.00 | 38.00 | 47.00 | 70.00 | 88.00 |
| Flanged, Face to F...inch. | ..... | 8 | 8½ | 8¾ | 9¾ | 10¾ | 11½ | 11½ | 13½ | 15 | 15½ | |
| List { Stationary { Scr....ea. | 7.00 | 10.25 | 12.25 | 16.50 | 18.00 | 23.00 | 25.00 | 30.50 | 38.00 | 45.00 | 64.00 | 82.00 |
| No. 4 { Stem { Fig. " " | 7.50 | 10.75 | 13.25 | 17.50 | 18.50 | 23.50 | 25.50 | 31.00 | 38.00 | 43.50 | 64.50 | 80.00 |
| Flanged, Face to F...inch. | 5¾ | 6½ | 6¾ | 8¼ | 8¾ | 9¾ | 10¾ | 11½ | 11½ | 11 | 13½ | 14¾ |
| List { Stationary { Scr....ea. | 6.00 | 8.75 | 11.00 | 15.00 | 16.25 | ..... | 23.75 | 28.00 | 35.25 | 40.00 | 58.00 | 74.00 |
| No. 1 { Stem { Fig. " " | 6.75 | 9.50 | 12.00 | 15.75 | 17.25 | ..... | 24.00 | 28.50 | 35.75 | 40.00 | 58.50 | 73.00 |
| Flanged, Face to F...inch. | 5¾ | 6½ | 6¾ | 8¼ | 8¾ | 10¾ | 11½ | 11½ | 11 | 12½ | 12½ | |
| Outside Screw and Yoke....add. | ..... | ..... | 8.50 | 9.25 | 10.00 | 11.00 | 12.00 | 14.00 | 16.00 | 18.00 | 23.00 | 27.50 |

Other sizes, 1, 1¼, 1½, 9-inch, also 14-inch and larger valves quoted on application.

QUICK OPENING



INDICATOR

STANDARD
IRON BODY GATE
VALVES

SPECIAL PATTERNS

Can also furnish All Iron Valves.

B778

SCREWED OR FLANGED

B779

| Size...inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-----|-----|-----|------|------|--------|
| B778.....each | 16.00 | 18.00 | 22.00 | 25.00 | 27.00 | 30.00 | 34.00 | 40. | 57. | 69. | 96. | 110. | 150.00 |
| B779..... " | 15.00 | 18.00 | 22.00 | 27.00 | 30.00 | 34.00 | 36.00 | 44. | 60. | 75. | 100. | 115. | 155.00 |
| Diam of Flgs.. in. | 6 | 7 | 7½ | 8½ | 9 | 9¼ | 10 | 11 | 12½ | 13½ | 15 | 16 | 19 |

Larger sizes quoted on application.

"VICTOR" GATE



B779½

LUNKENHEIMER
Iron Body, Brass Mounted
GATE VALVES

Victor Valves are Double Seated.

Victor Valves with Outside Screw and Yoke, also with Bypass, quoted on application.

All Iron Valves take same list as below.

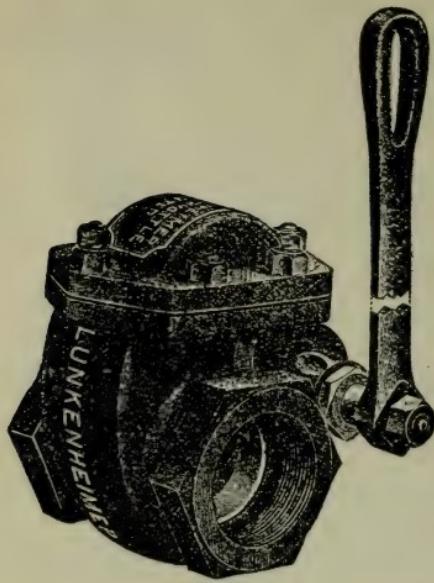
"CLIP" GATE



B779½

| Size.....inches | ½ | ¾ | 1 | 1½ | 1½ | 2 | 2½ | 3 | 3½ | 4 |
|------------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| "Victor" Scr. or Flgd. | ..... | ..... | ..... | ..... | ..... | 9.00 | 11.00 | 14.00 | 22.00 | 29.00 |
| "Clip" Screwed..... | 1.50 | 1.90 | 2.50 | 3.50 | 5.00 | 7.50 | 12.00 | 15.00 | 18.00 | 20.00 |
| "Clip" Flanged..... | ..... | ..... | 3.00 | 4.90 | 6.00 | 8.50 | 13.50 | 16.90 | 20.30 | 22.50 |
| Size.....inches | 4½ | 5 | 6 | 7 | 8 | 9 | 10 | 12 | *14 | *15 |
| "Victor" Scr. or Flgd. | 34.00 | 42.00 | 53.00 | 60.00 | 75.00 | 90.00 | 115.00 | 170.00 | 235.00 | 300.00 |
| "Clip" Screwed..... | 23.00 | 25.00 | 30.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| "Clip" Flanged..... | 26.00 | 28.30 | 33.80 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

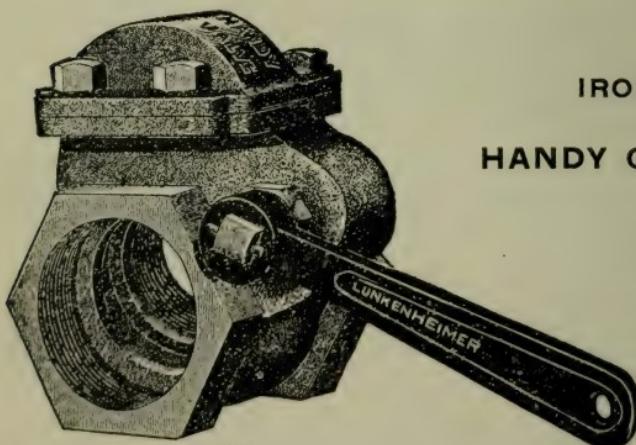
* Flanged only.



B780

IRON BODY**LEVER THROTTLE
VALVE**For Steam Working Pressure
of 150 PoundsSee Brass Valves, B626
for smaller sizes.

| Inches | 2 | 2½ | 3 | 3½ | 4 | 5 | 6 | 8 |
|--------------|------|-------|-------|-------|-------|-------|-------|-------|
| Screwed..... | 8.50 | 16.00 | 20.00 | 25.00 | 30.00 | 35.00 | 40.00 | ..... |



B781

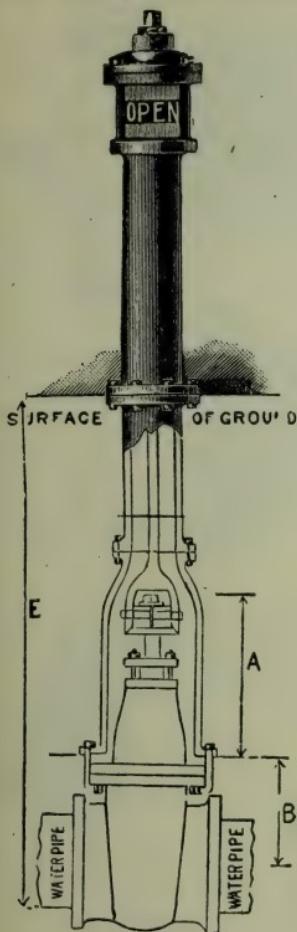
IRON BODY**HANDY GATE VALVE**For Pressures up to
75 PoundsSee Brass Valves, B627
for smaller sizes.

| Size.....inches | 2 | 2½ | 3 | 3½ | 4 |
|-----------------|-------|-------|-------|-------|-------|
| Screwed..... | 7.00 | 12.00 | 15.00 | 18.00 | 21.00 |
| Size.....inches | 4½ | 5 | 6 | 8 | ..... |
| Screwed | 25.00 | 30.00 | 35.00 | 65.00 | ..... |

Handy Valve can also be furnished $\frac{3}{4}$ inch to 6 inches in all iron. Use same list.

INDICATOR POSTS

For Underground Valves

B784
Prices on Application**FLOOR STANDS**For Valves Beneath Floors
with or without
IndicatorB785
Prices on Appli-
cation**INDICATOR POST**

B784

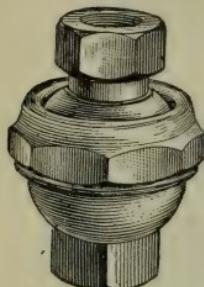
This Post indicates whether the valve in the main is open or shut. It can be used with any make of valve.

When ordering, state the distance from surface of ground to bottom of pipe, and whether valves are to open by turning to right or left, also give the number of turns to fully open or close valve, and the distance from bottom of pipe to top of opening nut on valve, and the square of the nut on valve, also size and shape of nut wanted on post, also state distance from bottom of pipe to top of stuffing box on valve, also send sketch of stuffing box with dimensions marked.

FLEXIBLE JOINTS

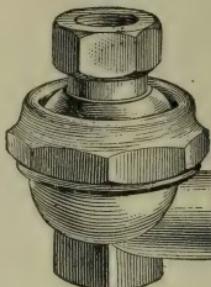
FOR STEAM, AIR, AND GAS

No. 1



B786

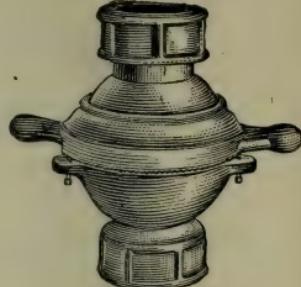
No. 2



B787

FOR LIQUIDS

No. 3



B788

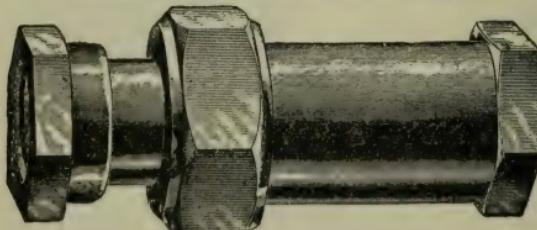
| Size.....inches | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ |
|-------------------|---------------|---------------|---------------|---------------|---------------|------|----------------|----------------|------|----------------|
| Nos. 1 and 3..ea. | 2.75 | 3.00 | 3.00 | 3.25 | 3.75 | 4.25 | 5.25 | 6.00 | 7.50 | 9.00 |
| No. 2..... " | 3.00 | 3.25 | 3.25 | 3.50 | 4.00 | 4.50 | 5.50 | 6.25 | 8.75 | 10.50 |

| Size.....inches | 3 | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ | 5 | 6 | *7 | *8 | *9 | *10 |
|-------------------|-------|----------------|-------|----------------|-------|-------|-------|-------|--------|--------|
| Nos. 1 and 3..ea. | 11.25 | 14.00 | 15.00 | 18.75 | 18.75 | 25.00 | 50.00 | 75.00 | 95.00 | 115.00 |
| No. 2 " | 12.25 | 15.50 | 16.75 | 20.75 | 20.75 | 27.50 | 55.00 | 82.50 | 104.50 | 126.50 |

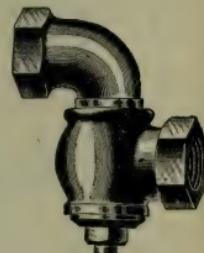
*Screwed or Flanged. In ordering state whether steam, air, or liquid is to be conveyed.

BRASS STEAM JOINTS—B789

| Size....inches | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|----------------|---------------|---------------|---------------|---------------|------|----------------|----------------|-------|
| Rough...each | 1.90 | 2.20 | 2.50 | 3.50 | 5.00 | 6.50 | 9.00 | 13.00 |
| Finished " " | 2.30 | 2.70 | 3.00 | 4.00 | 5.75 | 7.25 | 10.00 | 15.00 |

BRASS EXPANSION JOINTS

B790



B789

STANDARD TRAVERSE

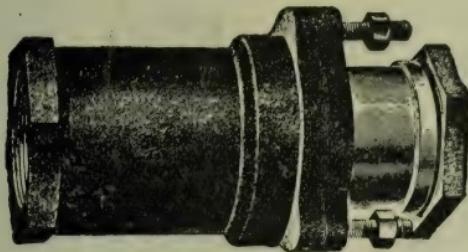
| Size |inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|----------------|-------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Traverse | inches | 2 | $2\frac{1}{4}$ | $2\frac{1}{4}$ | $2\frac{1}{4}$ | $2\frac{1}{4}$ | $2\frac{1}{2}$ | $2\frac{1}{2}$ | $2\frac{3}{4}$ |
| Price | each | 1.50 | 2.20 | 2.75 | 4.00 | 5.00 | 8.00 | 17.50 | 24.00 |

SPECIAL TRAVERSE

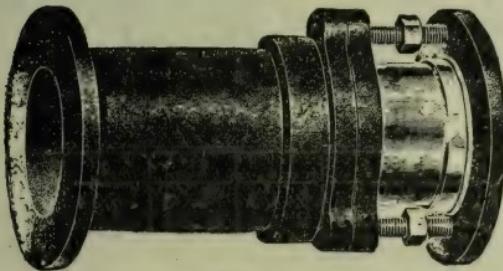
| Traverse | Size |inches | $\frac{3}{8}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ |
|----------|-------------|-------------|---------------|-------|----------------|----------------|-------|----------------|
| 6 inches | Price:..... |each | 8.25 | 9.00 | 10.00 | 11.50 | 13.50 | 24.00 |
| 8 " | " | " | 9.00 | 10.00 | 11.25 | 13.00 | 15.50 | 27.00 |
| 10 " | " | " | 9.75 | 11.00 | 12.50 | 14.50 | 17.50 | 30.00 |
| 12 " | " | " | 10.50 | 12.00 | 13.75 | 16.00 | 19.50 | 33.00 |

IRON BODY EXPANSION JOINTS

With Brass Sleeve



B791 Screwed



B792 Flanged

IRON BODY EXPANSION JOINTS.—Screwed, Standard Traverse

| Size..... |inches | 2 | 2½ | 3 | 3½ | 4 | 5 | 6 |
|---------------------|-------------|-------|-------|-------|-------|-------|-------|-------|
| Traverse..... |inches | 2½ | 2½ | 2¾ | 3 | 3¼ | 4 | 5 |
| Screwed | each | 7.00 | 8.00 | 10.00 | 14.00 | 18.00 | 38.00 | 45.00 |
| Flanged | " | 15.00 | 16.00 | 18.50 | 25.00 | 30.00 | 48.00 | 55.00 |
| Diam. Flanges |inches | 6 | 7 | 7½ | 8½ | 9 | 10 | 11 |

| Size |inches | 7 | 8 | 9 | 10 | 12 | 14-15 | 16 |
|---------------------|-------------|-------|--------|--------|--------|--------|--------|--------|
| Traverse |inches | 6 | 7 | 7 | 7 | 8 | 10 | 10 |
| Screwed | each | 70.00 | 100.00 | 110.00 | 160.00 | 225.00 | ..... | ..... |
| Flanged | " | 80.00 | 110.00 | 120.00 | 175.00 | 250.00 | 50.000 | 600.00 |
| Diam. Flanges |inches | 12½ | 13½ | 15 | 16 | 19 | 21-22½ | 23½ |

IRON BODY EXPANSION JOINTS.—Special Traverse

| Traverse | Size.....in. | 2 | 2½ | 3 | 3½ | 4 | 5 | 6 | 7 | 8 |
|----------|--------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| Screwed | 6 in. Price .. ea. | 11.00 | 13.00 | 17.50 | 25.00 | 30.00 | 45.00 | 55.00 | ..... | ..... |
| | 10 " " " | 16.00 | 19.00 | 25.00 | 35.00 | 42.00 | 62.00 | 80.00 | 100.00 | 140.00 |
| | 12 " " " | 18.50 | 22.00 | 29.00 | 40.00 | 48.00 | 70.00 | 92.50 | 115.00 | 160.00 |
| | 14 " " " | 21.00 | 25.00 | 33.00 | 45.00 | 54.00 | 78.00 | ..... | ..... | ..... |
| | 16 " " " | 23.50 | 28.00 | 37.00 | 50.00 | 60.00 | 86.00 | ..... | ..... | ..... |
| | 18 " " " | 26.00 | 31.00 | 41.00 | 55.00 | 66.00 | ..... | ..... | ..... | ..... |
| Flanged | 6 " " " | 18.00 | 20.00 | 25.00 | 35.00 | 40.00 | 55.00 | 65.00 | ..... | ..... |
| | 10 " " " | 23.00 | 26.00 | 32.50 | 45.00 | 52.00 | 72.00 | 90.00 | 112.00 | 150.00 |
| | 12 " " " | 25.50 | 29.00 | 36.50 | 50.00 | 58.00 | 80.00 | 102.50 | 127.00 | 170.00 |
| | 14 " " " | 28.00 | 32.00 | 40.50 | 55.00 | 64.00 | 88.00 | ..... | ..... | ..... |
| | 16 " " " | 30.50 | 35.00 | 44.50 | 60.00 | 70.00 | 96.00 | ..... | ..... | ..... |
| | 18 " " " | 33.00 | 38.00 | 48.50 | 65.00 | 76.00 | ..... | ..... | ..... | ..... |

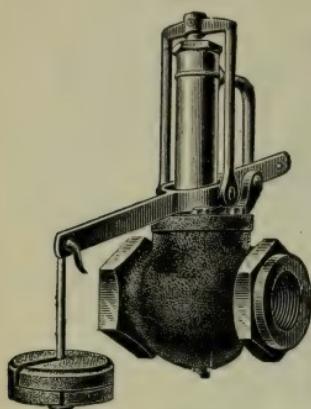
The expansion will average about 1 inch in 50 feet of pipe. Template for drilling, see Index, Companion Flanges, Standard.

Double Expansion Joints quoted on application.

Iron Expansion Joints can be furnished with iron sleeve, special.

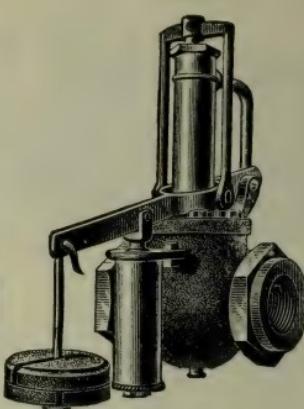
DAVIS PRESSURE REGULATING VALVES

No. 1.



B800

No. 2.



B801

No. 3



B802

| Size.....inches | $\frac{1}{2}$ and $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{4}$ | 3 | $3\frac{1}{2}$ |
|---------------------------------|---------------------------------|-------|----------------|-----------------|-----------------|-----------------|----------------|-----------------|
| No. 1.....each | 20.00 | 22.00 | 24.00 | 25.00 | 30.00 | 35.00 | 40.00 | 50.00 |
| Nos. 2 and 4... " | 25.00 | 27.00 | 29.00 | 30.00 | 36.00 | 42.00 | 48.00 | 58.00 |
| End to End, Nos. 1 and 2, ea. | $3\frac{1}{4}$ | 4 | $4\frac{1}{2}$ | $6\frac{1}{4}$ | $7\frac{1}{8}$ | $7\frac{1}{8}$ | $9\frac{1}{4}$ | $10\frac{1}{4}$ |
| Size.....inches | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 14 |
| No. 1.....each | 60.00 | 75.00 | 100.00 | 135.00 | 175.00 | 275.00 | 400.00 | 500.00 |
| Nos. 2 and 4... " | 70.00 | 90.00 | 120.00 | 160.00 | 200.00 | 300.00 | 435.00 | 600.00 |
| Face to Face, Nos. 1 and 2, ea. | $10\frac{3}{4}$ | 12 | 13 | 14 | $16\frac{1}{4}$ | $18\frac{1}{2}$ | 22 | $24\frac{1}{4}$ |
| Diam. of Fl....each | 9 | 10 | 11 | $12\frac{1}{2}$ | $13\frac{1}{2}$ | 16 | 19 | 21 |

$\frac{3}{4}$ to $1\frac{1}{2}$ -inch, inclusive, Screwed Ends; 2 to 6 inch inclusive, either Screwed or Flanged Ends; 7 to 15-inch, Flanged Ends.

No. 1 is designed for all purposes where there is no pulsation of pressure, such as Steam Heating, etc.

No. 2 is to be used where there is a vibration or pulsation of pressure—for large Power Plants, Electric Light Stations, etc. No. 4 is similar to No. 2 except it has Hub Ends for Wooden or Cast Iron Water Pipe. By a slight change in internal construction it can also be used as a relief valve.

PRICE LIST NO. 3 REGULATOR—B802

| Size.....inches | $1\frac{1}{2} \times 3$ | 2×4 | $2\frac{1}{2} \times 5$ | 3×6 | 4×8 | 5×10 | 6×12 | 8×14 |
|----------------------|-------------------------|--------------|-------------------------|--------------|-----------------|---------------|-----------------|-----------------|
| Price,.....each | 40 | 50 | 65 | 85 | 135 | 195 | 280 | 360 |
| Length, face to face | $7\frac{1}{4}$ | 8 | 9 | 10 | $12\frac{1}{2}$ | 15 | $17\frac{1}{2}$ | $20\frac{1}{2}$ |

In ordering give the initial and delivery pressures and specify the service for which the valve is wanted.

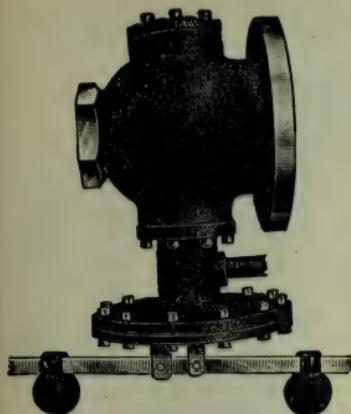
Sizes $1\frac{1}{2} \times 3$ and 2×4 have screwed ends only; $2\frac{1}{2} \times 5$ and 3×6 have inlet screwed and outlet flanged; 4×8 to 8×14 have inlet and outlet flanged only.

The No. 3 Regulator is constructed along the same lines as the Nos. 1 and 2, the only difference being that it has an expanded outlet. It is adapted to high or low pressure. A lug is cast on the body so that a dash-pot can be attached if found necessary.

DAVIS BLOWER REGULATOR

| Size....ins. | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{4}$ | 3 | $3\frac{1}{2}$ | 4 | 5 | 6 | 7 | 8 | 10 | 12 | 14 |
|--------------|---------------|---------------|----|----------------|----------------|----|----------------|----|----------------|----|----|-----|-----|-----|-----|-----|-----|
| Price, each | 25 | 25 | 27 | 29 | 30 | 36 | 42 | 48 | 58 | 70 | 90 | 120 | 160 | 200 | 300 | 435 | 600 |

Construction similar to No. 2 Regulator, but steam flows in opposite direction. Placed in steam feed pipe between boiler and fan engine, and is weighted for the desired boiler pressure.



DAVIS "P & W" REDUCING VALVE B804

This valve is especially designed for the Paul or Webster Systems of steam heating, but is satisfactory for any low pressure or vacuum system.

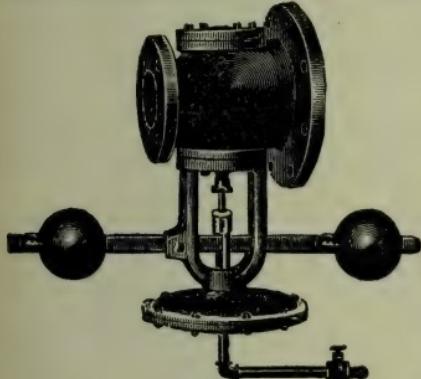
This valve should be placed in a horizontal position, preferably with the diaphragm facing down, that the water of condensation may protect it from the heat of the steam.

EXPANDED OUTLET

| | | | | | | | | | |
|------------|--------|------|-----|------|-----|-----|------|------|------|
| Size..... | inches | 1½x3 | 2x4 | 2½x5 | 3x6 | 4x8 | 5x10 | 6x12 | 8x14 |
| Price..... | | 50 | 60 | 70 | 100 | 160 | 200 | 300 | 400 |

The 2 x 4 valve has both ends screwed; 2½ x 5 and 3 x 6 have inlet screwed and outlet flanged; 4 x 8 and over have both ends flanged.

| | | | | | | | | | | | | | | | |
|---------------------|--------|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|
| Size..... | inches | 1 | 1¼ | 1½ | 2 | 2½ | 3 | 3½ | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Straight Sizes..... | | 22 | 29 | 34 | 40 | 50 | 60 | 70 | 100 | 135 | 175 | 220 | 285 | 325 | 360 |



"ECLIPSE" VACUUM-PRESSURE REGULATING VALVE B805 (Fig. 71)

For use in atmospheric vacuum or very low pressure Heating Systems.

The Valve is constructed with an independent diaphragm which is actuated by pressure taken from low pressure side at a distance from the Valve at a point of regulation designated by the company installing the system.

State boiler pressure and pressure to be reduced to.

PRICE WITH ENLARGED OUTLET

| | | | | | | |
|--|--------|--------|---------|--------|--------|--------|
| Size..... | inches | 1 x 2 | 1¼ x 2½ | 1½ x 3 | 2 x 4 | 2½ x 5 |
| Each | | 33.00 | 42.50 | 53.50 | 72.00 | 96.00 |
| Dia. Inlet Flange, (is extra heavy)..... | inches | ... | ... | ... | 6½ | 7½ |
| " Outlet " (is Standard) | " | ... | ... | ... | 9 | 10 |
| Size | inches | 3 x 6 | 4 x 8 | 5 x 10 | 6 x 12 | 8 x 14 |
| Each | | 126.00 | 187.50 | 242.00 | 325.00 | 400.00 |
| Dia. Inlet Flange, (is extra heavy)..... | inches | 8½ | 10 | 11 | 12½ | ... |
| " Outlet " (is Standard) | " | 11 | 13½ | 16 | 19 | ... |

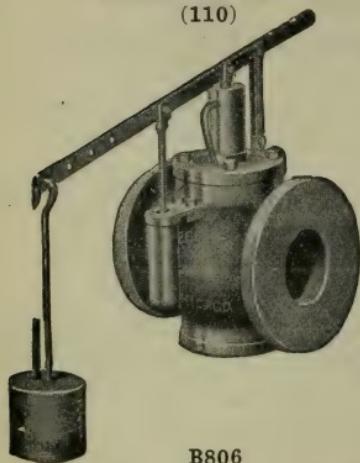
B805 STRAIGHT SIZES (Inlet and Outlets same Size)

Sizes 1-inch to 12 inches use list prices B806.

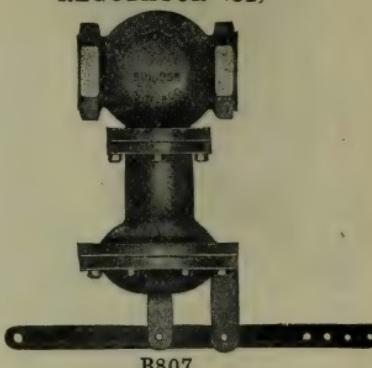
The valve is two seated, so constructed that seats adjust themselves to any change of temperature. They are very sensitive and promptly respond to the slightest variation in pressure. Endorsed and used by all the companies installing vacuum systems of heating.

"ECLIPSE" REDUCING VALVES AND PRESSURE REGULATORS

REDUCING VALVE
(110)



LOW PRESSURE
REGULATOR (81)



B806

Always state pressure, also pressure you wish to reduce to.

SCREWED AND FLANGED

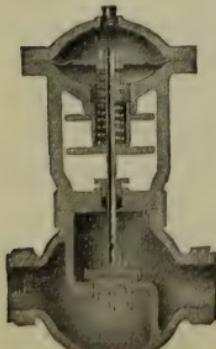
| | | | | | | | | | |
|---------------------------|--------|-------|-------|-------|--------|--------|--------|--------|-------|
| Size | inches | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 3 1/2 | 4 |
| Each | | 23.00 | 24.00 | 25.00 | 30.00 | 35.00 | 42.50 | 52.50 | 60.00 |
| *Flanges.....inches ..... | ..... | ..... | 6 | 7 | 7 1/2 | 8 1/2 | 9 | ..... | ..... |
| Size.....inches | | 4 1/2 | 5 | 6 | 7 | 8 | 10 | 12 | ..... |
| Each | | 70.00 | 75.00 | 100 | 125.00 | 185.00 | 275.00 | 350.00 | ..... |
| *Flanges..... | | 9 1/4 | 10 | 11 | 12 1/2 | 13 1/2 | 16 | 19 | ..... |

Larger sizes than 6 in. are made flanged only.

* B806 Reducing Valve can be furnished **Extra Heavy**, with Flange Diameter same as Extra Heavy Flange Fittings at special price.

The B806 Reducing Valve is for reducing from boiler pressure not exceeding 125 pounds, to a pressure from 10 to 40 pounds on low pressure side; for reducing steam to lower pressures for dynamos or other manufacturing purposes, or for steamheating. For pressure above 125 pounds, special net prices on application.

B807 is also used with **Expanded Outlet**. Use same list as B805. B807 and B805 Valves are intended to reduce the steam pressure from boiler to any pressure between 1 pound and 15 pounds, and is especially adapted for use in buildings where a low pressure is desired.



"ECLIPSE" AUTOMATIC WATER, AIR, AND GAS REGULATOR

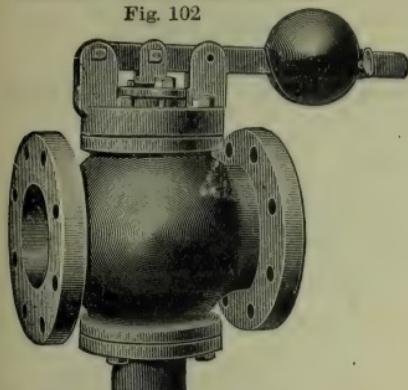
Use **List Price** at Top of Page.

State definitely the pressure carried and pressure to be reduced to. It is guaranteed to work perfectly.

B808

KIELEY PRESSURE REGULATING VALVES**KIELEY HIGH PRESSURE**

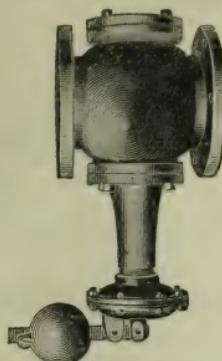
Fig. 102



B810

EUREKA LOW PRESSURE

Fig. 101



B811

In ordering state clearly the pressures desired to be reduced from and to what.

HIGH PRESSURE REGULATING VALVES—B810

For Reducing Steam or Air from the Initial or High Pressure down to any Pressure on the Reduced Side above 15 Pounds, that may be desired.

| Size.....inches | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ |
|-------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|-----------------|-----------------|
| Screwed or Flanged..ea. | 32.50 | 34.00 | 37.00 | 39.00 | 46.00 | 54.00 | 60.00 | 75.00 |
| Face to Face..ins. | ..... | ..... | ..... | ..... | $6\frac{1}{4}$ | $7\frac{1}{2}$ | $8\frac{1}{2}$ | $9\frac{1}{2}$ |
| Size.....inches | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
| Screwed or Flanged..ea. | 90.00 | 116.00 | 156.00 | 200.00 | 260.00 | 380.00 | 380.00 | 550.00 |
| Face to Face..ins. | $10\frac{1}{2}$ | $11\frac{3}{4}$ | $12\frac{3}{4}$ | $13\frac{3}{4}$ | $14\frac{3}{4}$ | ..... | $16\frac{1}{2}$ | $18\frac{1}{2}$ |

Sizes 2-inch and under have Screwed Ends, 2½-inch and larger Flanged Ends.

Diameter of Flanges on these High Pressure Regulators can be furnished Standard or Extra Heavy. See Index for Flanges, Companion.

EUREKA LOW PRESSURE REGULATOR—B811

For Reducing Steam, Air or Gas from the Initial or High Pressure down to any Pressure less than 15 Pounds, and from this point down to as low as 1 Pound.

| Size.....inches | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ |
|--------------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|-----------------|----------------|
| Price .....each | 26.00 | 28.50 | 31.00 | 32.50 | 39.00 | 45.50 | 52.00 | 65.00 |
| Face to Face..ins. | ..... | ..... | ..... | ..... | 6 | $7\frac{1}{2}$ | $8\frac{1}{2}$ | $9\frac{1}{2}$ |
| Size.....inches | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 12 |
| Price .....each | 78.00 | 97.00 | 130.00 | 175.00 | 227.00 | 350.00 | 350.00 | 470.00 |
| Face to Face..ins. | $10\frac{3}{4}$ | $11\frac{3}{4}$ | $12\frac{3}{4}$ | $13\frac{5}{8}$ | $14\frac{5}{8}$ | ..... | $16\frac{1}{4}$ | .... |

Sizes 2-inch and under have Screwed Ends, 2½-inch and larger Flanged Ends.

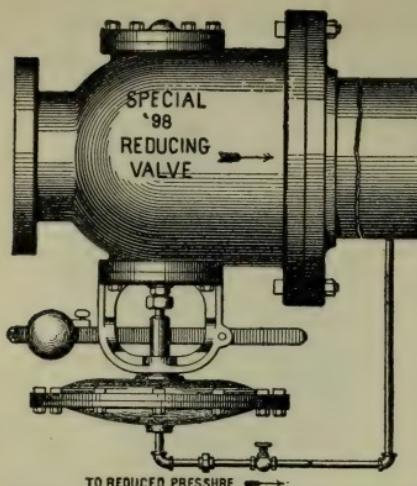
Diameter of Flanges same as Standard Companion Flanges; see Index.

LOW PRESSURE REGULATOR (FIG. 107)—B812

| Size.....inches | $2\frac{1}{4}$ | $2\frac{1}{2}\times 5$ | 3×6 | $3\frac{1}{2}\times 7$ | 4×8 | 5×10 | 6×12 |
|-----------------|----------------|------------------------|-------------|------------------------|-------------|--------------|--------------|
| Each..... | 60.00 | 70.00 | 100.00 | 13.000 | 160.00 | 200.00 | 300.00 |

Flange Diameters, same as Standard Flanged Fittings.

B812 is similar to B811 except the outlet is larger than the inlet opening. It is adapted for reducing Steam Pressure where no vacuum system is installed, or where it is desired to carry from 1 to 15 pounds on the heating system.



**KIELEY
PRESSURE REGULATING
VALVES**

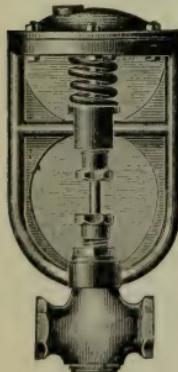
**SPECIAL "98"
VACUUM PRESSURE
REGULATORS**

B815

| | | | | | |
|-----------------|--------|---------------|-----------|--------|-----------|
| Size.....inches | 1 x 2 | 1 1/4 x 2 1/2 | 1 1/2 x 3 | 2 x 4 | 2 1/2 x 5 |
| Price .....each | 33.00 | 42.50 | 53.50 | 72.00 | 96.00 |
| Size.....inches | 3 x 6 | 4 x 8 | 5 x 10 | 6 x 12 | 8 x 14 |
| Price .....each | 126.00 | 187.50 | 242.00 | 325.00 | 400.00 |

Can be furnished with inlet and outlet same size if desired.

Flange Diameter same as Standard Fittings. See index, Flanges, Companion. Sizes, 1x2 to 2x4 inches, inclusive, made with small end screwed, all larger have flanged ends. Special "98" Regulators are for reducing steam pressures for heating purposes only, from that carried on boilers or steam heating mains down to a point of atmospheric pressure or below if desirable.



B816

"SPECIAL 1900"

PRESSURE REGULATING VALVES

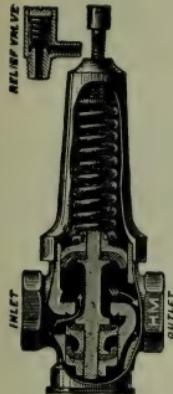
| | | | | | |
|------------------|-------|-------|-------|-------|-------|
| Size .....inches | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 |
| Each | 26.00 | 28.50 | 31.00 | 32.50 | 39.00 |

DIRECTIONS.—Connect initial pressure to end marked inlet and from some point on reduced side or pressure to be governed run a $\frac{1}{4}$ pipe connection with valve to and connect with diaphragm. It is desirable to have this connection at diaphragm rise up not less than 6 inches. Regulate pressure by hand wheel immediately above spring. Compress spring to increase and relax to decrease pressure.

In ordering it is especially important that you state clearly the pressure desired to be reduced from and to what.

This valve is intended for reducing pressure of 125 pounds or less to from 1 to 50 pounds. They are provided with renewable composition valve discs which when worn out can be readily replaced at a cost of but a few cents.

They will be found especially desirable in situations where it is required to locate regulating valve close up to steam appliance or apparatus upon which reduced pressure is to be employed.

SIZES $\frac{1}{2}$ in. to $2\frac{1}{2}$ in.

B817

LARGE SIZES

B818

MUELLER
WATER PRESSURE
REGULATORS

| Size .. inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | 4 | 6 | 8 |
|----------------|---------------|---------------|-------|----------------|----------------|-------|----------------|--------|--------|--------|---|
| Regular...ea. | 10.00 | 13.00 | 17.50 | 24.00 | 40.00 | 55.00 | 70.00 | 90.00 | 150.00 | 225.00 | |
| Special ... " | 12.00 | 15.00 | 20.00 | 28.00 | 46.00 | 63.00 | 80.00 | 105.00 | 170.00 | 265.00 | |

The special regulator is capable of adjustment to lower pressures.
Can be adjusted to zero.

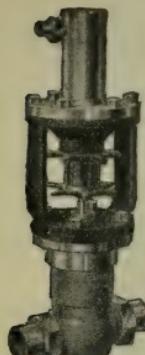


MUELLER
CONDENSATION RECEIVER AND
AUTOMATIC PUMP REGULATOR

B819

These Receivers and Regulators are very suitable where it is desired to place the automatic governing apparatus some distance from pump, or on different levels from steam pumps.

| Number | 0 | 1 | 2 | 3 | 4 |
|-------------------------------------|----------------|---------------|----------------|----------------|----------------|
| Steam Pipe..... | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ |
| Pipe Sizes | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | 4 |
| Capacity Sq. ft. Radiation.....feet | 5,000 | 10,000 | 20,000 | 30,000 | 40,000 |
| Each | 70.00 | 100.00 | 130.00 | 150.00 | 200.00 |



ECLIPSE PUMP REGULATOR

B820

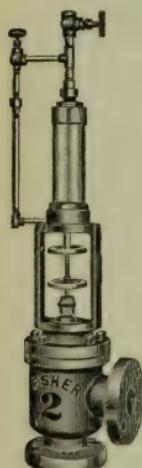
For fire, tank, elevator, air and water works pumps.

The Regulator is adjusted by spring, and not liable to be handled and changed.

This Regulator is guaranteed to work perfectly.

| | | | | | | |
|-----------------|--------|--------|--------|--------|--------|--------|
| Size.....inches | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 |
| Each..... | 30.00 | 35.00 | 42.00 | 50.00 | 60.00 | 75.00 |
| Size.....inches | 4 | 5 | 6 | 8 | 10 | 12 |
| Each..... | 100.00 | 135.00 | 180.00 | 250.00 | 400.00 | 500.00 |

Give Steam pressure, what pressure is desired to be carried on Main, or height of tank if for tank service.



FISHER GOVERNORS

PUMP GOVERNOR—B821

For controlling steam pumps, pumping into pipes against pressure.

GRAVITY GOVERNOR—B822

For controlling steam pumps, discharging into an elevated tank.

PUMP GOVERNOR—B821

| | | | | | | | | |
|----------------------------|-------|-------|-------|-------|--------|--------|--------|-------|
| Size.....inches | 1/2 | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 |
| Screwed .. each | 25.00 | 27.50 | 30.00 | 35.00 | 42.50 | 50.00 | 58.00 | 70.00 |
| Size.....inches | 2 | 2 1/2 | 3 | 3 1/2 | 4 | 5 | 6 | |
| Flgd. ea., including Flgs. | 50.00 | 60.00 | 75.00 | 87.50 | 100.00 | 125.00 | 150.00 | |

GRAVITY GOVERNOR—B822

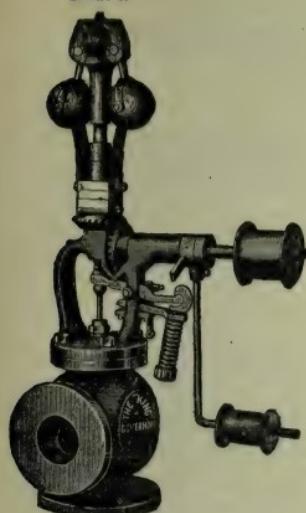
| | | | | | | | | | |
|---------------------------------------|-------|-------|-------|-------|-------|-------|--------|--------|------|
| Size.....inches | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 3 1/2 | 4 | 5 |
| Screwed ....each | 40.00 | 45.00 | 52.50 | 60.00 | 68.00 | .... | .... | .... | .... |
| Flanged, each, including Flanges..... | | | | 70.00 | 85.00 | 97.50 | 110.00 | 135.00 | |

DAVIS COMPETITION PUMP GOVERNOR—B823

| | | | | | | | | |
|------------------|-------|--------|--------|--------|--------|--------|--------|-------|
| Size .....inches | 1/2 | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 |
| Each..... | 25.00 | 25.00 | 30.00 | 35.00 | 42.00 | 50.00 | 60.00 | 75.00 |
| Size .....inches | 3 1/2 | 4 | 5 | 6 | 7 | 8 | 10 | .... |
| Each..... | 85.00 | 100.00 | 125.00 | 150.00 | 175.00 | 200.00 | 250.00 | .... |

This in effect is the Davis Balanced Valve with the addition of a device by means of which the admission of steam to the pump cylinder is controlled by the pressure from the discharge end. The lever is weighted similar to No. 1 Davis Pressure Regulator, and the lever is also controlled by a brass dash pot and brass water cylinder, both attached to body of valve and hanging below the lever.

KING



B824

ENGINE GOVERNORS

Illustration shows King Governor with Automatic Stop.

The price list given below also applies to Monarch, Sensative, Gardner, Judson, Pickering, and other standard makes of Governors.

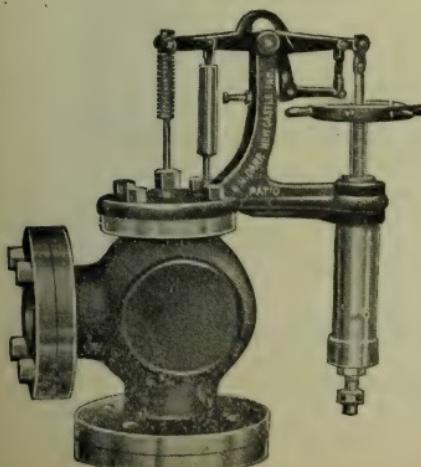
Class A are with Automatic Stop; Class B are without Stops.

All the above makes of Governors are made with or without Automatic Stops.

The Hoosier Governor can be adjusted while running to change speed of engine. Use list below.

| Size..... | inches | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{4}$ |
|---------------------------------|--------|----------------|-------|----------------|----------------|----------------|----------------|
| Price, Plain..... | each | 18.00 | 20.00 | 22.00 | 25.00 | 30.00 | 35.00 |
| " Finished..... | " | 20.00 | 22.00 | 25.00 | 29.00 | 34.00 | 40.00 |
| " Automatic Stops, Extra... " " | | 2.00 | 3.00 | 3.50 | 4.50 | 6.00 | 7.00 |
| Size..... | inches | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ | 5 |
| Price, Plain..... | each | 40.00 | 50.00 | 60.00 | 71.00 | 83.00 | 94.00 |
| " Finished..... | " | 45.00 | 58.00 | 69.00 | 81.00 | 94.00 | 106.00 |
| " Automatic Stops, Extra... " " | | 8.00 | 9.00 | 11.00 | 12.00 | 13.00 | 15.00 |

In ordering Governors, state which Class is wanted, whether Standard or Spring, Plain or Finished, and with or without Globe or Angle Stop Valve; also, whether inlet and outlet are wanted screwed or flanged, and state diameter of flanges.

**CARR PUMP GOVERNOR**

For Water Works Pumps, Hydraulic Elevator Pumps, Boiler Feed Pumps, Fire Pumps, and Air Compressors

B825

2-Inch and larger is with Speed Controller.

| Size | ins. | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|-------------|------|----------------|----------------|----------------|----------------|----------------|
| Dimensions. | | $2\frac{3}{4}$ | $3\frac{1}{4}$ | $3\frac{1}{2}$ | 4 | $4\frac{1}{4}$ |
| Each | | 27.50 | 30.00 | 35.00 | 42.50 | 52.50 |
| Size | ins. | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | 5 |
| Dimensions. | | 5 | $5\frac{1}{2}$ | 6 | $6\frac{1}{2}$ | 8 |
| Each | | 60.00 | 75.00 | 87.50 | 100.00 | 125.00 |

IMPROVED CLIMAX DAMPER REGULATOR

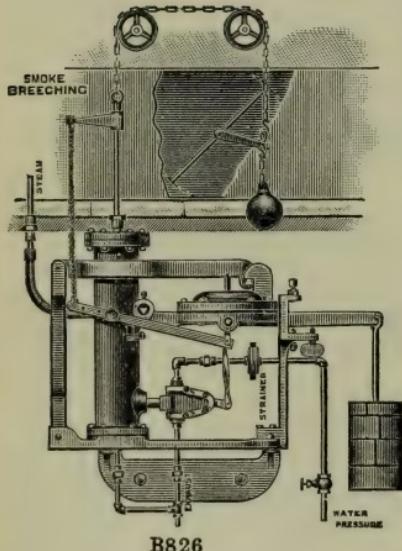
Can also be Fitted as a

THROTTLE OR STEAM VALVE CONTROLLER

For Mechanical Draft Systems, or as

AUTOMATIC RHEOSTAT CONTROLLER

For Electric Power Pumps

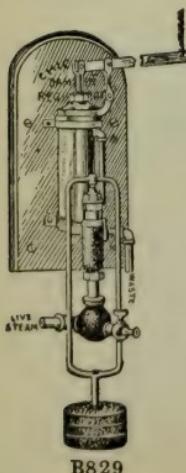


Price, \$150.00

As a Damper Regulator, will control one or more dampers, either singly or in battery formation, large or small sizes,—controlling the damper according to the rise or fall of steam pressure.

As a Throttle Controller it controls the speed of Fan Engine on forced or mechanical draft systems, by gradually opening or closing the throttle according to steam pressure in boilers.

As a Rheostat Controller it controls Electric Power Pumps on all services.

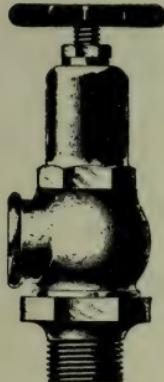
**DAVIS****HIGH PRESSURE DAMPER REGULATOR**

| | | |
|--|------|-------|
| Price, with Chains, Pulleys, and necessary attachments, complete | each | 50.00 |
|--|------|-------|

LOW PRESSURE DAMPER REGULATORS

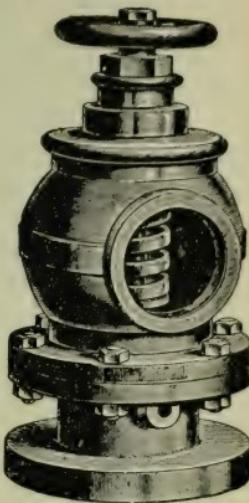
Come under head of Heating Boilers, etc.

BRASS,
Wheel Top



B840

IRON BODY,
With Bronze Seats



B841

WATER RELIEF VALVES

Be sure to state pressure valves are to blow off at. When used as a cylinder relief valve, should be set to relieve at 10 to 15 pounds higher than the working pressure.

Brass Valves can be furnished with plain top without wheel, if desired, for engine cylinders.

BRASS WATER RELIEF VALVE

| Size..... | inches | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|---------------|--------|---------------|-------|----------------|----------------|-------|----------------|-------|
| Screwed | each | 10.00 | 12.00 | 15.00 | 20.00 | 30.00 | 45.00 | 60.00 |

IRON BODY, SCREWED AND FLANGED

| Size..... | inches | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | 5 | 6 |
|---------------------|--------|----------------|-------|----------------|-------|----------------|--------|--------|--------|
| One Adjustment..... | | 30.00 | 40.00 | 50.00 | 60.00 | 75.00 | 90.00 | 110.00 | 140.00 |
| Two " | | 40.00 | 50.00 | 60.00 | 70.00 | 85.00 | 105.00 | 130.00 | 160.00 |

With two adjustments of given pressure, one set say at 40 lbs., and the other set at 200 lbs. The valve can be changed in a moment to blow off at either of these pressures, or any intermediate pressures.



LOW PRESSURE POP VALVE

B842

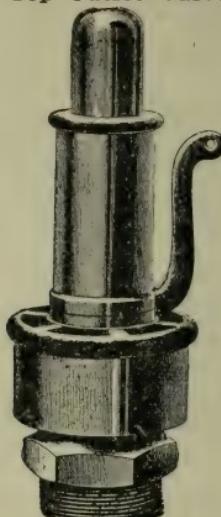
For House Heating Steam Boilers, for Pressures not Exceeding 20 Pounds

| Size...ins. | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ |
|-------------|---------------|------|----------------|----------------|-------|----------------|
| Each..... | 7.00 | 8.00 | 9.00 | 10.00 | 15.00 | 40.00 |

STANDARD BRASS POP SAFETY VALVES

Standard valves regularly carried in stock are set at 90 to 100 pounds.

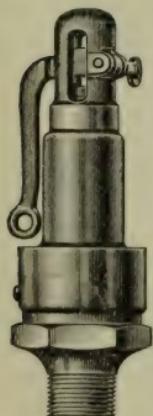
Top Outlet Valve



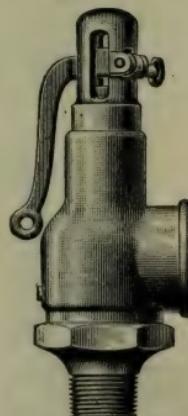
B843

| Size.....inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|----------------------------------|---------------|---------------|-------|----------------|----------------|-------|----------------|--------|
| Boiler.....H. P. | 3 | 3-6 | 3-10 | 10-20 | 20-30 | 30-40 | 40-75 | 75-100 |
| Standard Top Outlet ea. | 8.00 | 10.00 | 12.00 | 15.00 | 20.00 | 30.00 | 50.00 | 65.00 |
| Road Engine, Muffled, no lever " | ..... | 25.00 | 30.00 | 35.00 | 45.00 | ..... | ..... | ..... |

Side Outlet same list.



**LUNKENHEIMER
BRASS POP SAFETY
VALVES**



B844—Top Outlet

B845—Side Outlet

| Size.....inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|---------------------|---------------|---------------|---------------|------|----------------|----------------|-------|----------------|-------|
| Top Outlet.....each | 5.50 | 6.00 | 6.50 | 7.50 | 9.00 | 11.50 | 18.00 | 28.00 | 38.00 |
| Angle "....." | 6.00 | 6.50 | 7.00 | 8.20 | 9.80 | 12.40 | 19.50 | 30.00 | 41.00 |

Pop Valves are ordinarily carried in stock set to pop at 100 pounds pressure. Can be set at any desired pressure; if above 175 pounds, a heavier valve should be used.



IRON BODY POP SAFETY VALVES

B849

Can be furnished Vertical pattern, from factory with outlet looking straight up.

Encased Spring Valves quoted on application.

NOTE.—When ordering always state pressure valve is wanted to blow off at.

SCOTT PATENT MARINE AND STATIONARY LOCK-UP POP SAFETY VALVE

Iron Body, Phosphor Bronze Seats

| Pipe Size....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 |
|---------------------------|-------|-------|-------|-------|-------|--------|--------|--------|
| Screwed or Flanged...each | 40.00 | 50.00 | 60.00 | 75.00 | 90.00 | 100.00 | 110.00 | 140.00 |

Extra Heavy Improved Pop Valve for Water Tube Boilers—use above list.
Discount on application.

Regularly made these valves are all both screwed and flanged on the base. Made with Hexagon screwed base if desired.

IRON BODY POP SAFETY VALVES

AMERICAN Valve List, also **CROSBY** Valve List

Always state pressure they are to be set at.

Screwed and Flanged

| Pipe Size....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 |
|------------------------------|-------|-------|--------|---------|---------|---------|---------|----------|
| American Plain...ea. | 30.00 | 50.00 | 65.00 | 80.00 | 100.00 | 115.00 | 125.00 | 180.00 |
| Crosby " " | 30.00 | 50.00 | 65.00 | 80.00 | 100.00 | 125.00 | 160.00 | 250.00 |
| For Boilers....H. P. | 30-40 | 40-75 | 75-100 | 100-125 | 125-150 | 150-175 | 175-200 | 225 & up |
| Diam. Base Flange, Scr. ins. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

Can furnish with **Nickel** seat at small additional cost.

Lock-up attachment if wanted is extra.

American "Special" Pop Valve with Straight Lever for Water Tube Boilers, use above list. Discount quoted on application.

LUNKENHEIMER IRON BODY, BRASS MOUNTED POP VALVES

When ordering state pressure at which valve is to be set.

| Regular Pattern Size..ins. | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 |
|-----------------------------|-------|-------|-------|-------|-------|-------|--------|--------|
| Screwed or Flanged....ea. | 22.00 | 32.00 | 40.00 | 56.00 | 72.00 | 84.00 | 140.00 | 175.00 |
| Suitable for Boilers..H. P. | 50 | 70 | 100 | 125 | 150 | 175 | 200 | 300 |

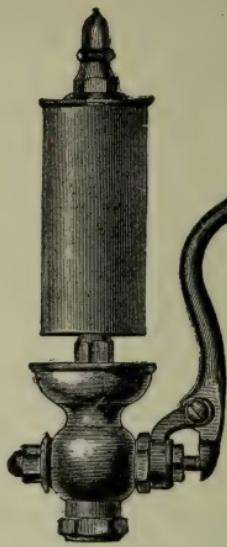
Base Flanges same diameter as Extra Heavy Fittings.

Special Enclosed Spring Valve, use above list. Discount on application.

The seat and disc are of the best bronze composition. We can furnish these valves with nickel seats. All valves have lock attachment.

**STANDARD
STEAM**

With Valve and



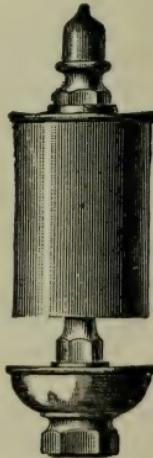
B851

**BRASS
WHISTLE**

Adjustable Lever

| | | | | | | | | | | | |
|-----------------------|------|-------|-------|------|-------|------|-------|-------|-------|-------|-------|
| Diam. Bell . . . ins. | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 3 1/2 | 4 | 5 | 6 | 8 |
| Size Pipe..ins. | 1/4 | 3/8 | 3/8 | 3/4 | 3/4 | 1 | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 |
| Price . . . each | 3.10 | 3.75 | 4.00 | 5.50 | 6.50 | 8.50 | 11.50 | 15.00 | 22.50 | 33.00 | 95.00 |

PLAIN WHISTLE

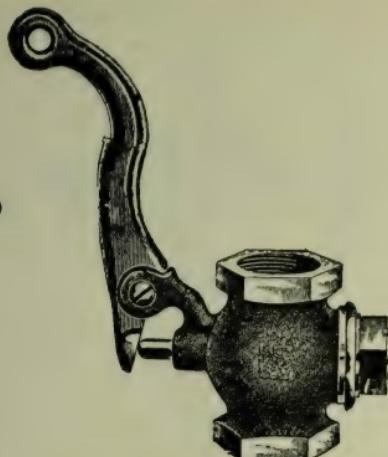


WITHOUT VALVE

B852

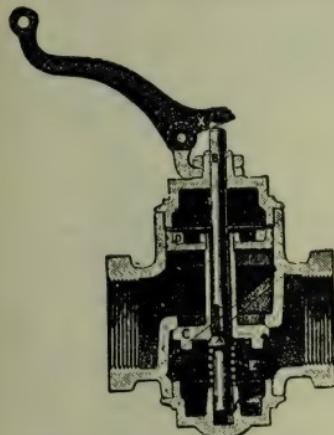
| | | | | | | | | | | | |
|-----------------------|------|-------|-------|------|-------|------|-------|-------|-------|-------|-------|
| Diam. Bell . . . ins. | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 3 1/2 | 4 | 5 | 6 | 8 |
| Size Pipe..ins. | 1/4 | 1/4 | 3/8 | 1/2 | 1/2 | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 |
| Price . . . each | 2.20 | 2.75 | 3.00 | 4.35 | 5.25 | 7.25 | 9.50 | 12.00 | 19.00 | 24.00 | 70.00 |

Larger sizes made to order.

**STANDARD
BRASS****WHISTLE
VALVE**

B853

| | | | | | | | | | | |
|-------------|--------|---------------|---------------|---------------|------|----------------|----------------|------|----------------|-------|
| Size | inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
| Price | each | 2.00 | 2.50 | 3.00 | 3.50 | 5.00 | 6.00 | 9.00 | 18.00 | 27.00 |

**AUTOMATIC BALANCED
WHISTLE VALVE**

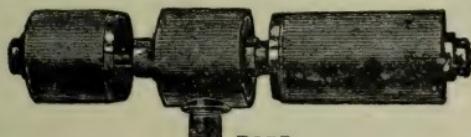
B854

| | | | | |
|---------------------|--------|-------|----------------|----------------|
| Brass, Screwed..... | inches | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ |
| Each | | 18.00 | 22.20 | 26.60 |
| Brass, Screwed..... | inches | 2 | $2\frac{1}{2}$ | 3 |
| Each | | 35.50 | 44.40 | 62.20 |

The Automatic Balanced Whistle Valve is so constructed that a slight pressure on the lever opens a small auxiliary valve and allows the steam pressure itself to open the main valve. As soon as the lever is released the valve closes.

IRON GONG WHISTLES

Makes an Entirely Different Sound from Ordinary Whistles
Can be Heard Distinctly from Six to Eight Miles

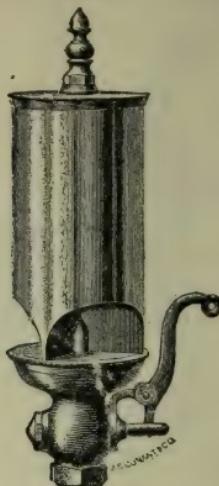


B855

| | | | | | | |
|-----------------------|-------------|----------------|----------------|-------|----------------|-------|
| Diameter of Bell..... |inches | 4 | 6 | 8 | 10 | 12 |
| Size of Pipe..... |inches | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
| Price..... | each | 12.00 | 16.00 | 20.00 | 30.00 | 50.00 |

Prices are without Valve and Pipe.

No. 3—WITH SIDE VALVE



**SINGLE
CHIME**

**BELL
WHISTLE**

B856

| Diameter of Bell. in. | 2 | 3 | 4 | 5 | 6 | 8 | 10 | 12 |
|-----------------------|---------------|---------------|-------|----------------|----------------|--------|----------------|--------|
| Size of Pipe.....in. | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
| No. 3, with Valve.ea. | 8.00 | 14.00 | 20.00 | 35.00 | 50.00 | 110.00 | 210.00 | 300.00 |
| No. 1, less " " " | 5.00 | 9.50 | 15.00 | 28.00 | 42.00 | 95.00 | 190.00 | 280.00 |

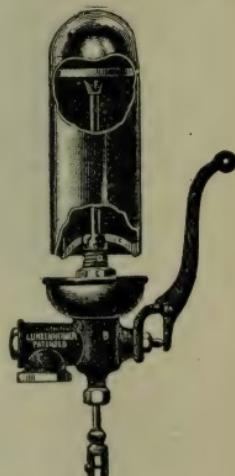
Can be furnished with Automatic Balanced Valve B854 at special price.

MOCKING BIRD WHISTLE



B857

FIRE ALARM WHISTLE

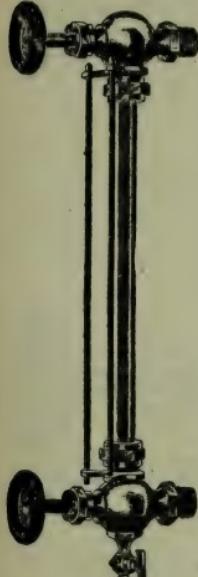


B858

| Diameter of Bell.....inches | 2½ | 3 | 3½ | 4 | 5 | 6 | 8 |
|---|-------|-------|-------|------|-----|------|------|
| Mocking { Brass with Valve....each | 10.50 | 14.00 | 20.00 | 28. | 40. | 56. | .... |
| Bird { " less " " " | 9.00 | 12.00 | 17.50 | 25. | 37. | 50. | .... |
| Fire { Brass with Valve...." | 24.00 | ..... | 31.00 | .... | 40. | .... | 100. |
| Alarm { Iron Base with Valve " | 30.00 | ..... | 40.00 | .... | 53. | .... | 120. |

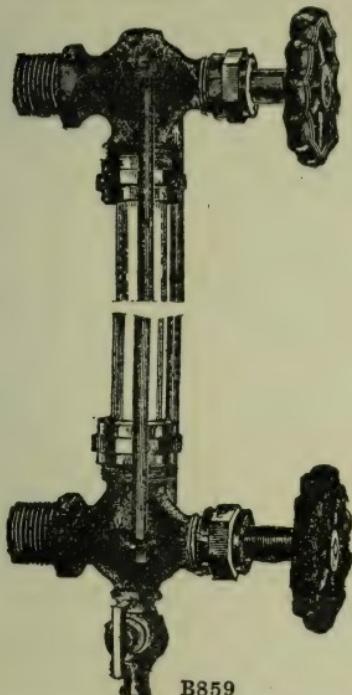
WATER GAUGES

**FINISHED
ROUND BODY**
Wood Wheel
Two Rod



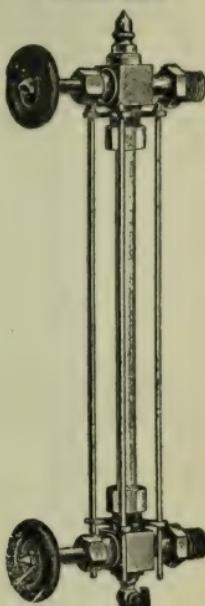
B860

ROUGH BODY—Iron Wheels



B859

**FINISHED
SQUARE BODY**
Wood Wheel
Four Rod



B861

| Size Glass | $\frac{5}{8} \times 10$ or 12 in. | $\frac{5}{8} \times 14$ in. | $\frac{3}{4} \times 14$ in. | $\frac{3}{4} \times 16$ in. |
|-----------------------------|-----------------------------------|-----------------------------|-----------------------------|-----------------------------|
| Pipe Thread | $\frac{1}{2}$ inch | $\frac{1}{2}$ inch | $\frac{3}{4}$ inch | $\frac{3}{4}$ inch |
| B859 Rough, Iron Wheels.... | 2 rod \| 4 rod | 2 rod \| 4 rod | 2 rod \| 4 rod | 2 rod \| 4 rod |
| | 3.00 | 3.25 | 4.50 | 4.50 |
| B860 Finished, Wood " | 4.25 5.00 | 4.50 5.25 | 5.50 6.25 | 5.50 6.25 |
| B861 " " " | 5.50 6.00 | 5.75 6.25 | 7.25 7.75 | 7.50 8.00 |

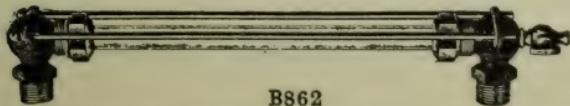
Special Drip Cock, with Thread on Outlet End, can be furnished at special price.

Special. Light Gauges with $\frac{1}{2}$ -in. x 10 or 12-in. Glass, and $\frac{3}{8}$ -inch pipe size threaded shank, 2 Rod.

Deduct from $\frac{5}{8}$ x 10-inch list, B859, 25c.; from B860, 50c.; from B861, 75c.

ROUGH BRASS TANK GAUGE

Without Valves

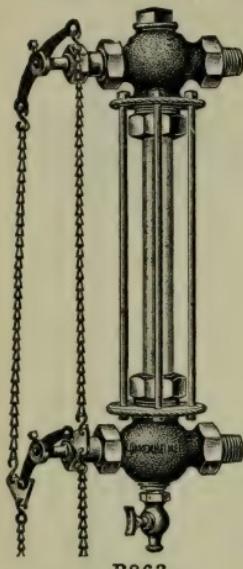


B862

Size $\frac{5}{8}$ x 10 or 12-inch Glass, $\frac{1}{2}$ -inch threaded (pipe size) shank, \$2.60.

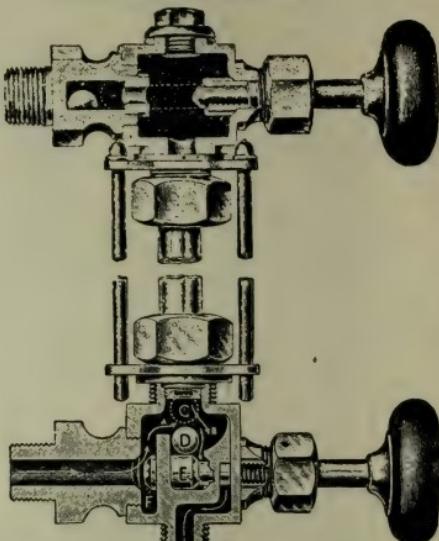
SPECIAL WATER GAUGES

QUICK CLOSING GAUGE



B863

AUTOMATIC GAUGE



B864

With Three Guards

| Size..... | $\frac{1}{2}$ -in. Glass | $\frac{5}{8}$ -in. Glass | $\frac{3}{4}$ -in. Glass | Size No. | Num- ber of Guards | Size of Glass | Pipe Thread Shank | Price |
|-------------------|--------------------------------|--------------------------------|--------------------------------|-------------|--------------------------|-------------------------|-------------------------|-------|
| | * $\frac{1}{2}$ -in. Thread | * $\frac{5}{8}$ -in. Thread | * $\frac{3}{4}$ -in. Turead | | | | | |
| Rough Body ...ea. | 10.50 | 11.50 | 13.50 | 41 | 2 | $\frac{5}{8} \times 10$ | $\frac{1}{2}$ in. | 11.00 |
| Finished Body " | 13.00 | 14.00 | 16.50 | 43 | 4 | $\frac{5}{8} \times 12$ | $\frac{1}{2}$ " | 12.00 |
| | | | | 45 | 4 | $\frac{5}{8} \times 14$ | $\frac{1}{2}$ " | 12.25 |
| | | | | 47 | 4 | $\frac{3}{4} \times 14$ | $\frac{3}{4}$ " | 12.75 |
| | | | | 49 | 4 | $\frac{3}{4} \times 16$ | $\frac{3}{4}$ " | 13.00 |

B863—Gauges are sent with rods and glass for 18-inch or less centres. State length desired. Larger than 18-inch can be furnished at special price. Chain is included in price.

*Thread is pipe size.

B864—Any size can be furnished with only 2 rods. Deduct from 4-rod list 75c. The automatic device or ball "D" is moved and agitated every time handle is turned and gauge glass blown out, and cannot, therefore, become stuck fast by sediment.

It is impossible for the devices to go to their seats except when glass breaks.

BRASS GUARDS

For Water Gauges

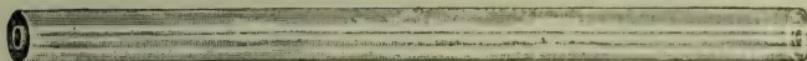


B865

| | | | | | |
|--------------|-------------|-----|-----|-----|-----|
| Length |inches | 12 | 14 | 16 | 18 |
| Price | net each | .07 | .08 | .12 | .15 |

Longer guards to order.

GAUGE GLASSES



B866

PRICE PER DOZEN

| Length..... | in. | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|-----|------|------|------|------|-------|-------|-------|-------|-------|
| $\frac{1}{2}$ and $\frac{5}{8}$ in..... | | 3.00 | 3.24 | 3.60 | 3.84 | 4.20 | 4.44 | 4.80 | 5.04 | 5.40 |
| $\frac{3}{4}$ inch..... | | 3.60 | 3.96 | 4.32 | 4.80 | 5.16 | 5.52 | 5.88 | 6.24 | 6.60 |
| Length..... | in. | 19 | 20 | 22 | 24 | 30 | 36 | 48 | 60 | 72 |
| $\frac{1}{2}$ and $\frac{5}{8}$ in..... | | 5.64 | 6.00 | 6.60 | 7.20 | 9.00 | 10.80 | 14.52 | 18.12 | 21.84 |
| $\frac{3}{4}$ inch..... | | 7.08 | 7.44 | 8.16 | 8.88 | 11.16 | 13.44 | 18.00 | 22.56 | 27.12 |

$\frac{5}{8}$ inch, 1 inch, and $1\frac{1}{4}$ inch special.

Red Reflecting Gauge Glasses quoted on application.

GLASS TUBE CUTTERS

CHESTERTON



B867

Each, \$2.50.

FAVORITE



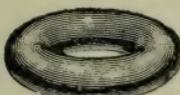
B868

Each, \$0.50.

RUBBER GAUGE GLASS WASHERS

SQUARE
CUT

B869

ROUND
MOULDED

B870

GILBERT'S SELF-PACKING
GAUGE GLASS PRESERVER

B871

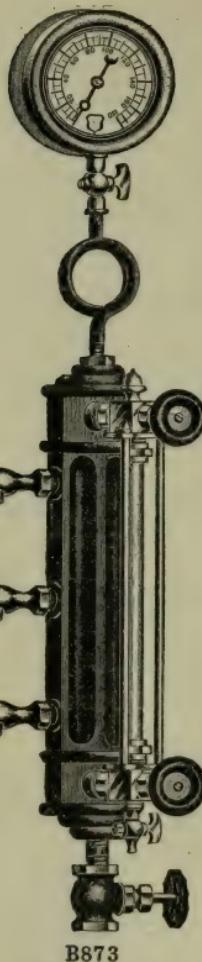
| | | | | | | | |
|--------------------------|-----------|------|--------------------------|-----------|------|---|---------|
| $\frac{1}{2}$ inch | per doz. | .18 | $\frac{1}{2}$ inch | per doz. | .20 | $\frac{1}{2}$ inch, $\frac{5}{8}$ inch or $\frac{3}{4}$ inch, 1 Doz. in a box | |
| $\frac{5}{8}$ " | " | .20 | $\frac{5}{8}$ " | " | .25 | | |
| $\frac{3}{4}$ " | " | .25 | $\frac{3}{4}$ " | " | .30 | Price | per box |
| Price..... | per pound | 1.50 | Price..... | per pound | 2.50 | Other Sizes Special | 1.20 |

RAINBOW GAUGE GLASS WASHERS

| | | | | | |
|------------|--|-----------|---------------|---------------|---------------|
| Size..... | | inch | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ |
| Price..... | | per gross | 5.00 | 5.50 | 6.00 |

Packed 1 gross in a box.

COMBINATION WATER AND STEAM GAUGES

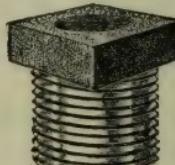


| Number..... | 1 | 2 | 3 | 4 |
|------------------------------|------|------|------|------|
| Iron Bodies only each | 2.75 | 4.00 | 6.00 | 8.00 |
| Centre to Centre | | | | |
| Boiler Connections in. | 10 | 12½ | 14 | 18 |
| Water Gauge Connections. " | 10 | 12½ | 14 | 18 |
| Gauge Cocks..... " | 3¾ | 3¾ | 4½ | 4 |
| Size Tapped | | | | |
| Boiler Connections in. | ½ | ¾ | 1 | 1¼ |
| Water Gauge..... " | ½ | ½ | ¾ | ¾ |
| Gauge Cocks..... " | ¾ | ½ | ¾ | ¾ |
| Top and Bottom..... " | ½ | ½ | ¾ | 1¼ |
| Extreme Length..... " | 13 | 16½ | 18¾ | 22½ |

TRIMMINGS

Gauge Cocks, Water Gauges, Steam Gauges, Siphons, Valves, etc., are extra. See other pages, see Index.

FUSIBLE PLUGS



B874

| | |
|-----------------|------|
| ½-inch.....each | .60 |
| ¾ " " " " | .75 |
| 1 " " " " | 1.00 |
| 1¼ " " " " | 1.50 |
| 1½ " " " " | 2.00 |
| 2 " " " " | 3.00 |

WILLIAMS SAFETY FEED WATER REGULATORS

See page 187.

No. 1—Suitable for Return Tubular, B. & W., Edge Moor, National, Abdenroth & Root, Robb-Mumford, Berry, Wheeler, Parker, Geary, Cahall Horizontal and most forms of horizontal boilers.

No. 2—Suitable for Heine, Franklin, Keeler, Erie and small units of Stirling.

No. 3—Suitable for Stirling, Scotch-Marine, Wickes Vertical, Manning, Hyde and Hazelton.

No. 4—Suitable for Cahall Vertical, Climax, Tudor Vertical and all vertical boilers built in large units.

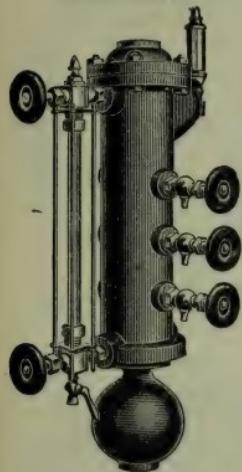
Auxiliary—The Auxiliary Regulator is applicable to any style, type or size of boiler. Blue prints showing method of attaching furnished on application.

Also Styles "A," "E," and "F" for Sterling Boilers only. \$100.00.

"Junior," for small vertical and horizontal units, from 5 to 80 H. P., \$90.00. The above prices include controlling valves 2 inches and less; for larger valves, \$5.00 for each ½ inch above 2 inches. **Gauge Cocks** and **Water Gauge** extra per column, \$5.00.

Auxiliary is a short pattern regulator, without gauge cocks or water gauge, intended for use in connection with an independent column.

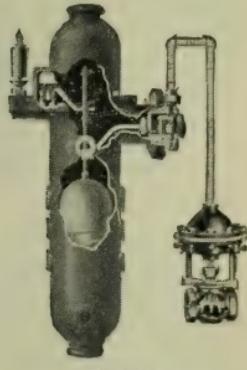
SAFETY WATER COLUMNS

HIGH AND LOW
WATER ALARM,
COMPLETE

B880

LOW WATER ALARM,
SECTIONAL

B881

COMBINED WITH
FEED WATER
REGULATOR

B882

| HIGH AND LOW | Number of Column | Kind and Size of Boiler, Inches | Variation Between Alarms, Inches | Price, Columns Only, Each | Price, Water Gauge and Gauge Cocks | Steam and Water Connections | Blow Off | Water Gauge | Gauge Glass | Gauge Cocks, Centers | Gauge Cocks | Diameter of Column |
|-----------------|------------------|------------------------------------|-------------------------------------|------------------------------|--|--------------------------------|----------|---------------|-----------------|-------------------------|-----------------|--------------------|
| 1 | 36 to 54 | 6 | 28.00 | 7.00 | 1 $\frac{1}{2}$ $\frac{3}{4}$ x14 | $\frac{5}{8}$ x12 | 3 | $\frac{1}{2}$ | 3 $\frac{3}{4}$ | 5 | 5 | 3 $\frac{3}{4}$ |
| 1 $\frac{1}{2}$ | 36 " 54 | 6 | 28.00 | 7.00 | 1 $\frac{1}{4}$ $\frac{3}{4}$ x14 | $\frac{5}{8}$ x12 | 3 | $\frac{1}{2}$ | 3 $\frac{3}{4}$ | 4 $\frac{1}{4}$ | 4 $\frac{1}{4}$ | 5 $\frac{1}{4}$ |
| 5 | 54 " 72 | 8 | 30.00 | 10.00 | 1 $\frac{1}{4}$ $\frac{3}{4}$ x18 | $\frac{3}{4}$ x16 | 4 | $\frac{3}{4}$ | 5 $\frac{1}{4}$ | 6 | 6 | 5 $\frac{1}{4}$ |
| 7 | Water Tube | 12 | 35.00 | 10.00 | 1 $\frac{1}{2}$ $\frac{3}{4}$ x21 | $\frac{3}{4}$ x19 | 9 | $\frac{3}{4}$ | 5 $\frac{1}{4}$ | 12 | 12 | 5 $\frac{1}{4}$ |
| 9 | Vertical | 18 | 40.00 | 10.00 | 1 $\frac{1}{2}$ $\frac{3}{4}$ x21 | $\frac{3}{4}$ x24 | 9 | $\frac{3}{4}$ | 5 $\frac{1}{4}$ | 10 | 10 | 5 $\frac{1}{4}$ |
| 11 | " " | 24 | 42.00 | 12.50 | 1 $\frac{1}{2}$ $\frac{3}{4}$ x32 $\frac{1}{2}$ | $\frac{3}{4}$ x30 | 12 | $\frac{3}{4}$ | 5 $\frac{1}{4}$ | 12 | 12 | 5 $\frac{1}{4}$ |
| 13 | " " | 30 | 45.00 | 20.00 | 1 $\frac{1}{2}$ $\frac{3}{4}$ x38 $\frac{1}{2}$ | $\frac{3}{4}$ x36 | 10 | $\frac{3}{4}$ | 5 $\frac{1}{4}$ | 12 | 12 | 5 $\frac{1}{4}$ |
| 15 | " " | 36 | 50.00 | 20.00 | 1 $\frac{1}{2}$ $\frac{3}{4}$ x44 $\frac{1}{2}$ | $\frac{3}{4}$ x42 | 12 | $\frac{3}{4}$ | 5 $\frac{1}{4}$ | 12 | 12 | 5 $\frac{1}{4}$ |
| 2 | 36 to 54 | .... | 25.00 | 7.00 | 1 $\frac{1}{2}$ $\frac{3}{4}$ x14 | $\frac{5}{8}$ x12 | 3 | $\frac{1}{2}$ | 3 $\frac{3}{4}$ | 4 $\frac{1}{4}$ | 4 $\frac{1}{4}$ | 3 $\frac{3}{4}$ |
| 6 | 54 " 72 | .... | 28.00 | 10.00 | 1 $\frac{1}{4}$ $\frac{3}{4}$ x16 | $\frac{3}{4}$ x14 | 4 | $\frac{3}{4}$ | 5 $\frac{1}{4}$ | 6 | 6 | 5 $\frac{1}{4}$ |
| 8 | Vertical | .... | 35.00 | 10.00 | 1 $\frac{1}{2}$ $\frac{3}{4}$ x21 | $\frac{3}{4}$ x19 | 6 | $\frac{3}{4}$ | 5 $\frac{1}{4}$ | 6 | 6 | 5 $\frac{1}{4}$ |

Nos. 13 and 15, two glasses joined at center with stuffing box. Four gauge cocks.

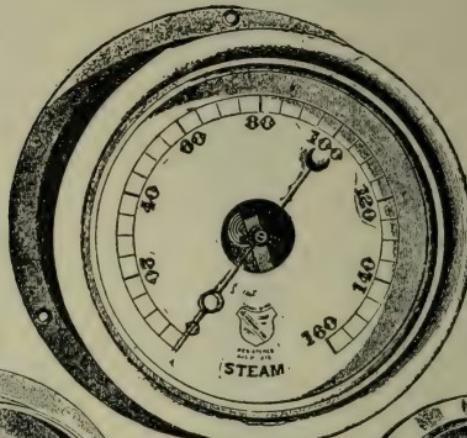
COMBINED FEED WATER REGULATORS

| Number | 1 | 2 | 3 | 4 | *Auxiliary |
|-----------------------------------|-------------------|----------------|----------------|----------------|-----------------|
| Price, without Trimmings | 100.00 | 100.00 | 110.00 | 110.00 | 70.00 |
| Variation Between Alarms | 6 | 6 | 10 | 12 | ..... |
| Steam and Water Connections | " $1\frac{1}{4}$ | $1\frac{1}{4}$ | $1\frac{1}{2}$ | $1\frac{1}{2}$ | $1\frac{1}{4}$ |
| Water Gauge Centers | " 16 | 16 | 20 | 24 | ..... |
| Gauge Cock | " 3 | 3 | 5 | 6 | ..... |
| Height Over All | " $32\frac{1}{2}$ | 32 | 45 | 40 | $17\frac{1}{2}$ |
| Outside Diameter | " $6\frac{3}{4}$ | $6\frac{3}{4}$ | $6\frac{3}{4}$ | $7\frac{3}{4}$ | $6\frac{3}{4}$ |

Above regulators suitable for boilers, see page 18 i.

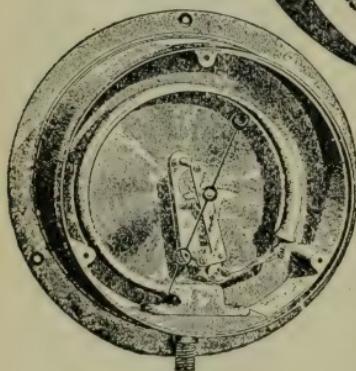
BOURDON SPRING GAUGES

DIAL OF PRESSURE GAUGE

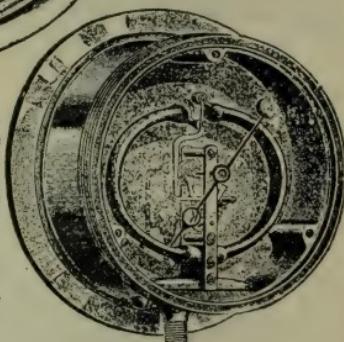


SINGLE SPRING

DOUBLE SPRING



B884



B885

B883
3½-inch and 5-inch Pressure Gauges with Dial marked 15, 30, 50, 100, 160, 180, 200 or 300 pounds; also 5-inch Vacuum Gauges kept in stock; also 500 lbs. special pressure. Prices include cock.

Dial should be graduated to about double the working pressure.

Gauges not warranted unless properly connected by syphon.

Also a Special 500-Pound 5-inch iron case Single Spring gauge at a special net price.

B884—SINGLE SPRING GAUGES—300 Pounds Pressure or Less

Price list applies to either Pressure Gauge or Vacuum Gauge.

| Size Dial | inches | 2-2½-3 | 3½ | 4½ | 5 | 5½ | 6 | 6¾ | 8½ | 10 | 12 |
|----------------------------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Iron Case, Brass Ring..... | ea. | 6.00 | 7.00 | 8.00 | 8.00 | 10.00 | 13.00 | 16.00 | 22.00 | 32.00 | 50.00 |
| Brass Case..... | " | 8.00 | 9.00 | 10.00 | 11.00 | 12.00 | 16.00 | 20.00 | 30.00 | 40.00 | 75.00 |
| " Deep Case..... | " | 9.25 | 10.25 | 11.50 | 12.50 | 13.75 | 18.50 | 23.00 | 33.50 | 44.00 | 80.00 |

The deep case gauges have either O. G. or Octagon rings.

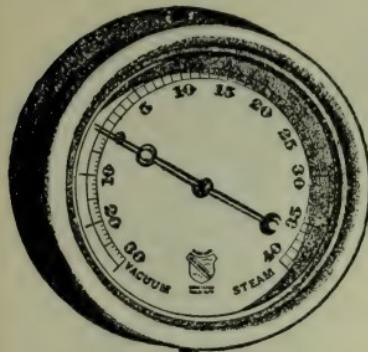
B885—LOCOMOTIVE AND STEAM FIRE ENGINE GAUGES

With Double Bourdon Spring. Prices including cock. (Stock size 5-inch 200 lbs.)

| Size Dial..... | inches | 4½ | 5 | 5½ | 6 | 6¾ | 8½ | 10 | 12 |
|----------------------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| Iron Case, Brass Ring..... | each | 10.00 | 11.00 | 12.00 | 15.00 | 18.00 | 25.00 | 37.00 | 55.00 |
| Brass Case..... | " | 12.00 | 13.00 | 14.00 | 18.00 | 22.00 | 34.00 | 45.00 | 80.00 |
| " Deep Case | " | 13.75 | 15.00 | 16.25 | 20.75 | 25.00 | 37.50 | 49.00 | 85.00 |

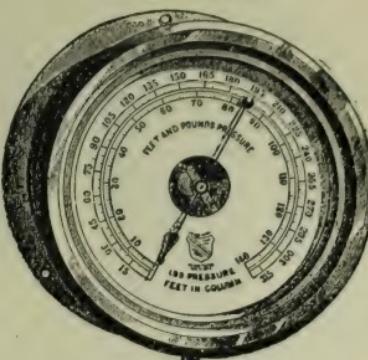
Ammonia Gauges showing pressure and vacuum quoted on application.

**COMPOUND PRESSURE AND
VACUUM GAUGE**



B886

**COMBINATION WATER
PRESSURE**



B887

B886—COMPOUND PRESSURE AND VACUUM GAUGE
For Compound Engines

| Diameter of Dial.....inches | 3½ | 4½ | 5½ | 6 | 6¾ | 8½ | 10 | 12 |
|---|-------|-------|-------|-------|-------|-------|-------|-------|
| Iron Case.....each | 10.00 | 12.00 | 14.00 | 16.00 | 20.00 | 30.00 | 40.00 | 60.00 |
| " " Nickel Plated Ring....." | 10.18 | 12.20 | 14.25 | 16.50 | 20.60 | 30.75 | 41.00 | 61.50 |
| Brass Case....." | 12.00 | 14.00 | 16.00 | 20.00 | 25.00 | 40.00 | 50.00 | 80.00 |
| Nickel Plated Case....." | 12.75 | 15.00 | 17.25 | 21.50 | 27.00 | 42.50 | 53.00 | 84.00 |
| Brass Deep Case, O. G. or Oct. Ring.....extra | 1.75 | 2.00 | 2.50 | 3.00 | 3.00 | 3.50 | 4.00 | 5.00 |

Gauges not warranted unless properly connected with a siphon.

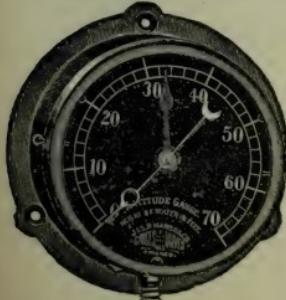
B887—COMBINATION WATER PRESSURE GAUGE

Showing pressure, and feet in column of water. Springs of solid drawn seamless tube.
For Water Works, Pumping Stations, Mines, etc.

| Size of Dial.....inches | 5½ | 6 | 6¾ | 8½ | 10 | 12 |
|--|-------|-------|-------|-------|-------|-------|
| Iron Case.....each | 14.00 | 16.00 | 20.00 | 30.00 | 40.00 | 60.00 |
| " " Nickel Plated Ring....." | 14.25 | 16.50 | 20.60 | 30.75 | 41.00 | 61.50 |
| Brass Case....." | 16.00 | 20.00 | 25.00 | 40.00 | 50.00 | 80.00 |
| Nickel Plated Case....." | 17.25 | 21.50 | 27.00 | 42.50 | 53.00 | 84.00 |
| Brass Deep Case, O. G. or Octagon Ring.....extra | 2.50 | 3.00 | 3.00 | 3.50 | 4.00 | 5.00 |

This gauge does not require a siphon.

**DEEP CASE STEAM VACUUM AND BACK PRESSURE
GAUGE—Single Spring or Double Spring Quoted on Application**



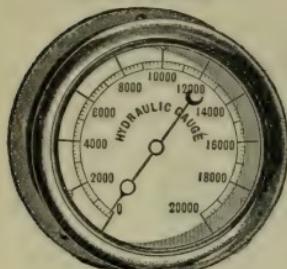
B889

ALTITUDE GAUGES

Registering height of water in elevated tank.
Stock Size is 5-inch Iron Case.

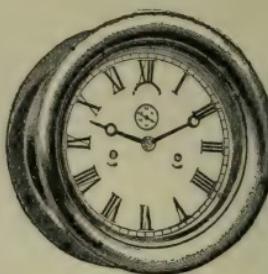
| Size Dial.....inches | 3½ | 4½, 5 | 6 | 6¾ | 8½ |
|---------------------------|-------|-------|-------|-------|-------|
| Iron Case, Brass R....ea. | 10.00 | 12.00 | 16.00 | 20.00 | 30.00 |
| " " N. P. " | 10.18 | 12.20 | 16.50 | 20.60 | 30.75 |
| Brass " | 12.00 | 14.00 | 20.00 | 25.00 | 40.00 |
| " " N. P. " | 12.75 | 15.00 | 21.50 | 27.00 | 42.50 |

HYDRAULIC Steel Spring



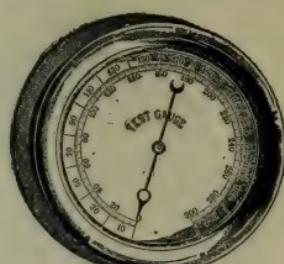
B890

ENGINE ROOM CLOCKS



B891

TEST GAUGE
Single Bourdon Spring



B892

Quoted on application.

B890 - HYDRAULIC GAUGE

Shows pounds per square inch, and tons on ram.

In these gauges a steel tube, bored from a solid bar, is substituted for the seamless brass tube for all pressures over 800 pounds per square inch. Hydraulic gauges should be connected with a check valve.

B892—BRASS CASE STANDARD TEST GAUGE

Springs of Solid Drawn Seamless Tube. Scaled in one pound marks. Graduated by open mercury column.

| Size of Dial..... | inches | 3 | $3\frac{1}{2}$ | $4\frac{1}{2}$ | $5\frac{1}{2}$ | 6 | $6\frac{3}{4}$ | $8\frac{1}{2}$ | 10 |
|-------------------------|--------|-------|----------------|----------------|----------------|-------|----------------|----------------|-------|
| Brass Case..... | each | 14.00 | 14.00 | 16.00 | 20.00 | 25.00 | 30.00 | 40.00 | 50.00 |
| Nickel Plated Case..... | " | 14.60 | 14.75 | 17.00 | 21.25 | 26.50 | 32.00 | 42.50 | 53.00 |

Gauges not warranted unless properly connected with a siphon.

STEAM GAUGE SYPHONS



B893

Each, 50c



B894



B89E



B896

**GAUGE
HAND PULLER**

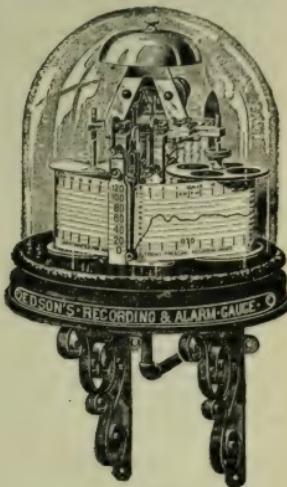
| B894 - B895 | B896 |
|--------------------------|------|
| Straight, Plain.....each | 1.00 |
| " with Cock | 1.50 |
| Angle Pattern add | .25 |

PRESSURE RECORDING GAUGES

EDSON No. 1 ALARM



B898



B899

PRICE LIST—B898

| | | |
|---|-------------|-------|
| Nickel Plated, with Ink and 100 Charts..... | each | 50.00 |
| With Electric Alarm Attachment, Extra..... | " | 10.00 |
| Additional Charts..... | per hundred | .75 |
| " " Printed with Copying Ink..... | " | .85 |
| Special Ink | per bottle | .25 |

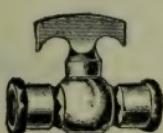
EDSON PRESSURE RECORDING AND ALARM GAUGES

| Number..... | 1 | | 2 | | 3 |
|----------------|----------------------------|-----------------------------|--|---|----------|
| Description... | High or Low Pressure Alarm | High and Low Pressure Alarm | High or Low Pressure Alarm To Ring at a Distance | High and Low Pressure Alarm To Ring at a Distance | No Alarm |
| Price.....each | 85.00 | 90.00 | 80.00 | 85.00 | 75.00 |

Prices include one year's supply of Charts and Album for filling same.

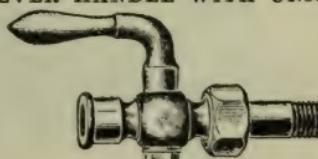
STEAM GAUGE COCKS

TEE HANDLE, FEMALE



B900

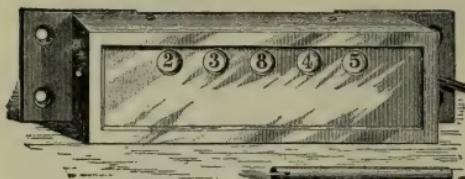
LEVER HANDLE WITH UNION



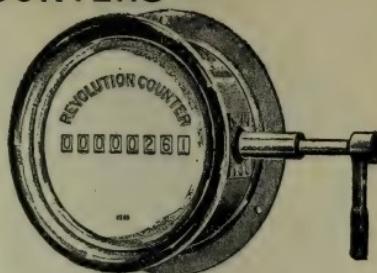
B901

| Size | inch | $\frac{1}{4}$ | Size | inch | $\frac{1}{4}$ |
|--------------------|------|---------------|--------------------|------|---------------|
| Finished..... | each | .50 | Finished..... | each | 1.50 |
| Nickel Plated..... | " | .75 | Nickel Plated..... | " | 2.00 |

REVOLUTION COUNTERS



B902



B903

SQUARE CASE REVOLUTION COUNTERS

| Size.....inches | 4½x1¾ | 5x1¾ | 5½x1¾ | 6x1¾ | 7x2½ | 8x2½ | 9x2½ | 10x2½ |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Number of Figures.. | 4 | 5 | 6 | 7 | 4 | 5 | 6 | 7 |
| Each, Plain | 17.50 | 20.00 | 24.00 | 28.00 | 20.00 | 24.00 | 28.00 | 32.00 |
| " Resetting..... | 21.50 | 24.00 | 28.00 | 32.00 | 24.00 | 28.00 | 32.00 | 36.00 |

Register 4 fig. 10,000, 5 fig. 100,000, 6 fig. 1,000,000, 7 fig. 10,000,000.

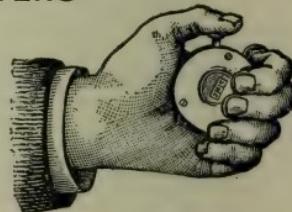
ROUND CASE REVOLUTION COUNTERS

| Size Dial .. .inches | 12 | 10 | 8½ | 12 | 10 | 8½ | 6¾ |
|------------------------------|--------|-------|-------|--------|-------|-------|-------|
| Number of Wheels | 8 | 8 | 8 | 6 | 6 | 6 | 6 |
| Price, Brass Deep Case...ea. | 110.00 | 95.00 | 80.00 | 100.00 | 85.00 | 70.00 | 60.00 |
| " Nickel-Plated Deep Case " | 114.00 | 98.00 | 82.50 | 104.00 | 88.00 | 72.50 | 62.00 |

HAND COUNTERS



B904



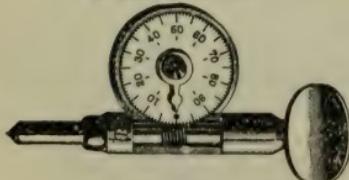
B905

Price each, \$3.00.

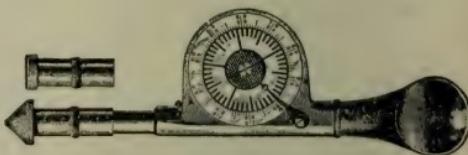
SPEED INDICATORS

SINGLE SPEED

REGISTERING



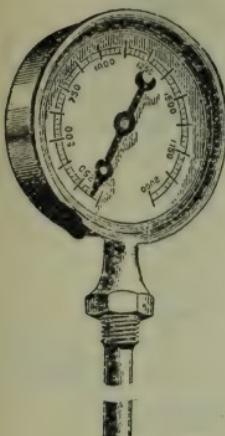
B906



B907

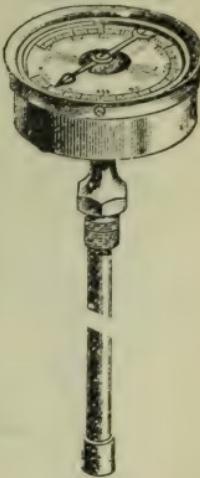
| | | |
|---------------------------|------|------|
| B906—With Plain Cap | each | 1.00 |
| " Split " | " | 1.15 |
| High Speed Indicator..... | " | 1.25 |
| B907—Price | " | 3.00 |
| In Leatherette Case | " | 3.50 |

VERTICAL



B908

HORIZONTAL



B909

PYROMETERS

For Blast Furnaces, Ovens, Stills,
Boiler Flues, Chimneys, Etc.

PRICE, 6-INCH DIAL

| | | |
|------------------|------|-------|
| Brass Case | each | 30.00 |
| Iron " | " | 25.00 |

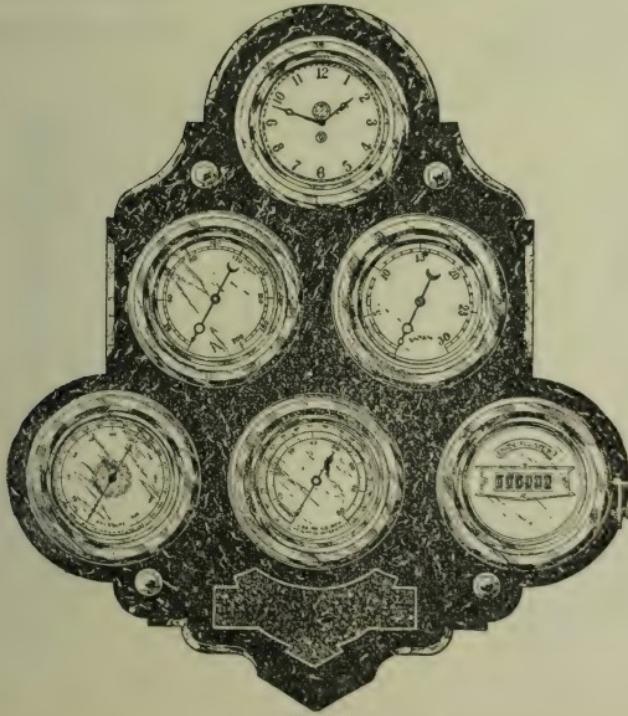
These pyrometers have $\frac{3}{4}$ -inch pipe connections, and can be furnished for temperatures up to 2,000° Fahrenheit.

Unless specially made, the entire length of stem should be inserted in the heat.

When ordering, please state for what purpose desired; height of temperature required; length of stem, whether wanted horizontal or vertical.

GAUGE BOARD

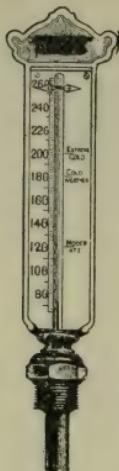
For Six Instruments



B910

Can furnish any design of Marble, Slate, or Wood.

State number and size of instruments wanted. Make a rough sketch of pattern desired. Prices on application.



B911

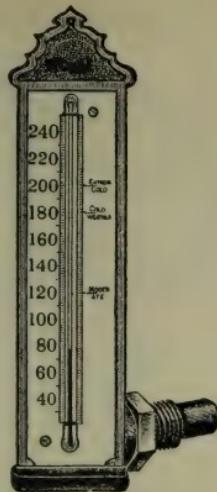
Each, \$2.00

STRAIGHT

ANGLE

HOT WATER THERMOMETERS

For Heating Systems



B912

Each, \$2.50

**CONICAL SHAPED
BACK ANGLE PATTERN**
With Detachable Stem
and Union Connection

STEAM PLANT THERMOMETERS AND MERCURY GAUGES

For Feed Water, Economizers, Con-
densers and Thermo Steam
Indicators

Can furnish with scale graduated to 280° F. and 30 pounds steam.

These thermometers are usually with 7-inch, 9-inch, or 12-inch scale. With either Straight or Angle Stem.

Can also be furnished with stems set at obtuse angle for high or low location.

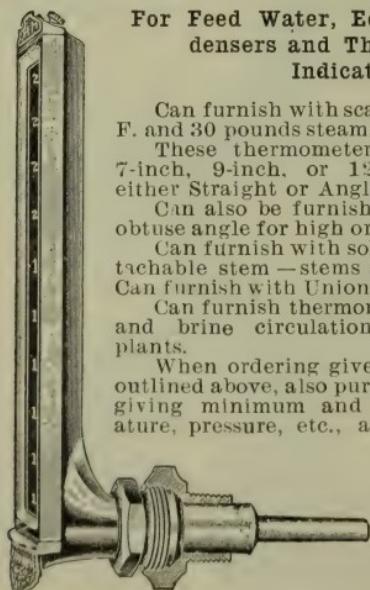
Can furnish with solid stem or with de-
tachable stem — stems any length desired.
Can furnish with Union connection.

Can furnish thermometers for ammonia
and brine circulation for refrigerating
plants.

When ordering give full particulars as
outlined above, also purpose to be used for,
giving minimum and maximum tempera-
ture, pressure, etc., as near as possible.

Also state whether
Flat Case, Cylin-
drical Case, or
Conical shaped
back, Straight or
Angle Stem.

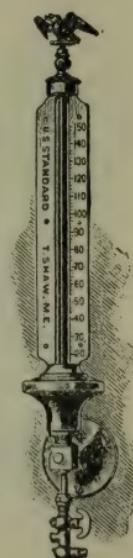
Prices on ap-
plication.



B913

B913.—Angle Thermometer showing detachable stem and Union Connection.
Can furnish special plug to close union when thermometer is removed.

B914.—Shaw's Mercury Pressure and Vacuum Gauge, for any pressure. State
minimum and maximum pressure. 16-inch Column, Nickel Plated, \$25.00.



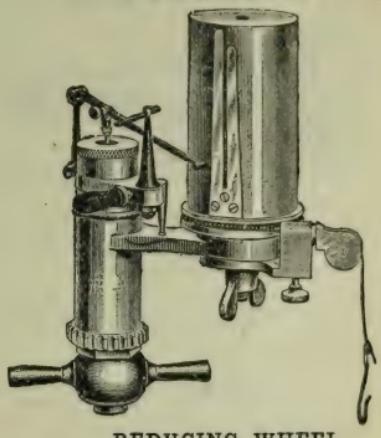
B914

AMERICAN THOMPSON IMPROVED INDICATORS

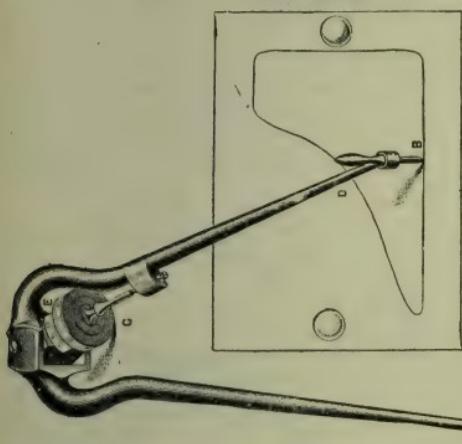
SPRING



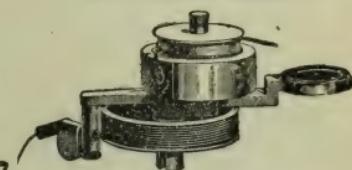
ENGINE INDICATOR No. 1



PLANIMETER



REDUCING WHEEL



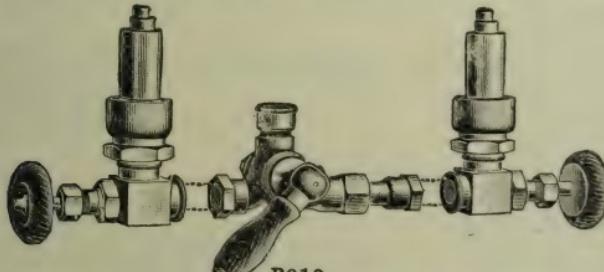
| | | |
|--|------|--------|
| Indicator Nos. 1 or 2, for Steam, Gas, or Oil Engines..... | each | 85.00 |
| Ammonia Indicator or Indicator with Electrical Attachment..... | " | 110.00 |
| Dentent Motion, each. \$10.00. Reducing Wheels..... | " | 15.00 |

Each Indicator is packed in a handsome mahogany case: the prices given above include Indicator with one cylinder spring, two single or one three way cock, one scale, wrenches, screw driver, bottle of oil and book entitled "Twenty Years With the Indicator."

No. 1 Indicator has 2-inch paper drum, No. 2 $1\frac{1}{2}$ -inch paper drum.

Cylinder or Vacuum Springs, each, \$5.00. Planimeters, each. \$15.00.

COMPLETE INDICATOR ATTACHMENT WITH RELIEF AND CORNER VALVES

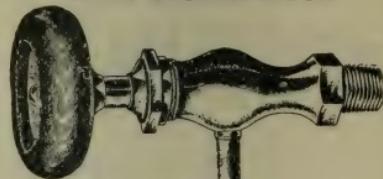


B919

| Size.....inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|-----------------------------------|---------------|---------------|-------|----------------|----------------|-------|----------------|--------|
| Fin., without Relief Valves..each | 23.00 | 24.00 | 25.00 | 25.60 | 27.00 | 34.00 | 42.00 | 50.00 |
| N. P., without Relief Valves. " | 25.60 | 26.40 | 28.00 | 29.00 | 32.00 | 40.00 | 47.00 | 58.00 |
| Finished, with Relief Valves " " | 32.00 | 34.00 | 37.00 | 40.00 | 45.00 | 60.00 | 84.00 | 100.00 |
| N. P., with Relief Valves... " | 36.00 | 38.00 | 42.00 | 46.00 | 53.00 | 70.00 | 94.00 | 110.00 |

COMPRESSION GAUGE COCKS**PLAIN**

B930

WITH STUFFING BOX

B931

Threaded for Iron Pipe

| Size.....inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | Size.....inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ |
|-----------------|---------------|---------------|---------------|-----------------|---------------|---------------|---------------|
| Each..... | .95 | 1.00 | 1.35 | Each | 1.20 | 1.30 | 1.70 |

MISSISSIPPI GAUGE COCK

B932

BALL GAUGE COCK

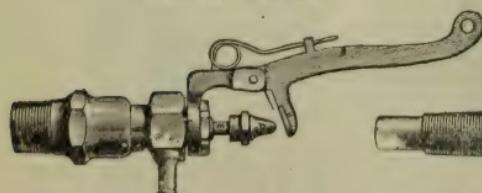
B933

Threaded for Iron Pipe

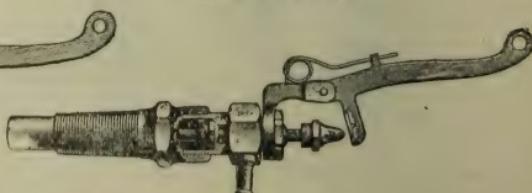
| Size.....inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | Size.....inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ |
|-----------------|---------------|---------------|---------------|-----------------|---------------|---------------|---------------|
| Each..... | .90 | 1.20 | 1.80 | Each..... | 1.00 | 1.00 | 1.00 |

Can be furnished with spring
at special price.

Price is with Iron Ball. Brass
Ball furnished at special price.

SELF-GRINDING ROTATING GAUGE COCKS**SHORT SHANK**

B934

LONG SHANK

B935

Pipe Threaded $\frac{1}{2}$ -inch or $\frac{3}{4}$ -inch. Each \$2.50.

T HANDLE

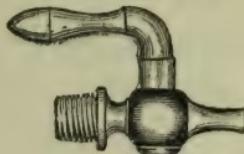


B940

AIR COCKS

Single Thread
Straight

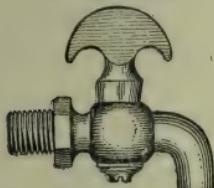
LEVER HANDLE



B941

| | | | | | | | | | |
|-----------|---------------|---------------|---------------|---------------|-----------|---------------|---------------|---------------|---------------|
| Inch..... | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | Inch..... | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ |
| Each..... | .40 | .45 | .50 | .60 | Each..... | .55 | .60 | .65 | .75 |

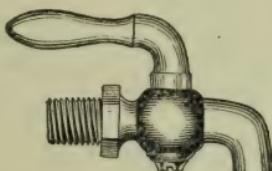
T HANDLE



B942

Bibb End

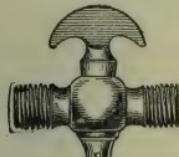
LEVER HANDLE



B943

| | | | | | | | | | |
|-----------|---------------|---------------|---------------|---------------|-----------|---------------|---------------|---------------|---------------|
| Inch..... | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | Inch..... | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ |
| Each..... | .70 | .80 | .90 | 1.00 | Each..... | .85 | .95 | 1.05 | 1.15 |

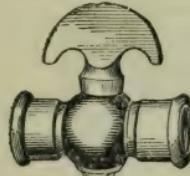
T HANDLE—Male



B944

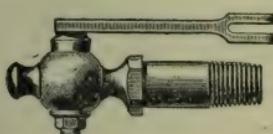
Double Thread

T HANDLE—Female



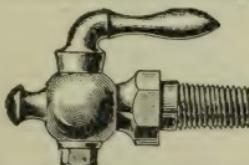
B945

| | | | | | | | | | |
|-----------------|---------------|---------------|---------------|---------------|-----------------|---------------|---------------|---------------|-------|
| Inch..... | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | Inch..... | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | ..... |
| T Handle..... | .55 | .65 | .75 | .90 | T Handle..... | .65 | .70 | .85 | ..... |
| Lever Handle... | .70 | .80 | .90 | 1.05 | Lever Handle... | .80 | .85 | 1.00 | ..... |



SLOTTED LEVER—B946

Cylinder Cocks, without union, will be furnished with discharge down through end of key, except on special order.

CYLINDER
COCKS

LEVER HANDLE—B947

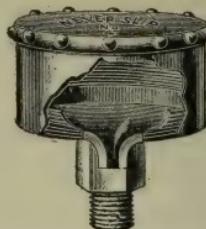
| | | | | | | |
|---------------------------------|------|---------------|---------------|---------------|---------------|---------------|
| Size Pipe Thread | inch | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ |
| Slotted Lever, Long Shank | each | 1.15 | 1.30 | 1.40 | 1.85 | ..... |
| Lever Handle, " " | " | 1.00 | 1.15 | 1.35 | 1.65 | 2.75 |

If with straight discharge with union add to list 50c.

Cylinder Cocks illustrated above have discharge downward through end of key. Can be furnished from factory with straight discharge with or without union, also with short shank, and T Handle, if desired.

"NEVERSLIP"
GREASE

B960



**PLAIN
CUP**

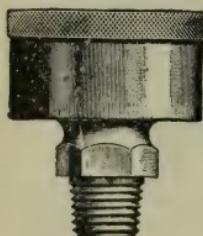
B960

| Number..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|
| Finished Brass.....each | .70 | .90 | 1.15 | 1.50 | 2.15 | 2.90 | 5.50 |
| Rough " " " | .60 | .80 | 1.05 | 1.35 | 1.80 | 2.80 | 4.50 |
| Diameter.....inches | 1 1/8 | 1 1/2 | 1 1/8 | 2 1/8 | 2 3/4 | 3 | 3 1/2 |
| Height....." | 1 1/2 | 1 3/4 | 2 | 2 1/4 | 2 3/4 | 4 1/4 | 6 1/4 |
| Size, Thread....." | 1/8 | 1/4 | 1/4 | 3/8 | 1/2 | 1/2 | 3/4 |

PLAIN STEEL GREASE CUPS—B961

| Number..... | 00 | 0 | 1 | 2 | 3 | 4 |
|----------------------------|-----|-------|-------|------|-------|------|
| Blued Steel.....each | .65 | .80 | .95 | 1.25 | 1.75 | 2.50 |
| Rough " " " | .50 | .65 | .80 | 1.05 | 1.45 | 2.00 |
| Inside Diameter.....inches | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 |
| Pipe Thread....." | 1/8 | 1/4 | 1/4 | 3/8 | 1/2 | 1/2 |
| Capacity Grease.....ounces | 1/2 | 2/3 | 1 | 2 | 3 1/2 | 5 |

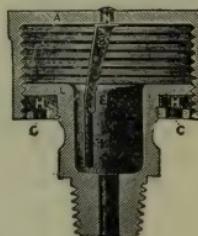
"DIAMOND"



B962

**SPECIAL PLAIN BRASS
GREASE CUPS**

"TIGER" SECTIONAL

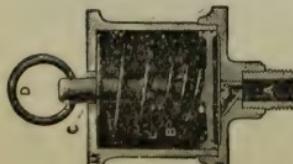


B963

| Number..... | 00 | 0 | 1 | 2 | 3 | 4 |
|------------------------------------|-------|--------|--------|-------|-------|-------|
| Price, Finished Brass.....each | .70 | .90 | 1.15 | 1.50 | 2.15 | 2.90 |
| " Rough " " " | .56 | .74 | .96 | 1.28 | 1.76 | 2.30 |
| Inside Diameter (Tiger).....inches | 7/8 | 1 7/16 | 1 1/8 | 1 7/8 | 2 3/8 | 2 7/8 |
| Height over all " " " | 1 3/4 | 2 | 2 5/16 | 2 1/8 | 2 5/8 | 3 1/4 |
| Pipe Thread....." | 1/8 | 1/4 | 1/4 | 3/8 | 1/2 | 1/2 |
| Capacity Grease.....ounces | 1/2 | 2/3 | 1 | 2 | 3 1/2 | 5 |

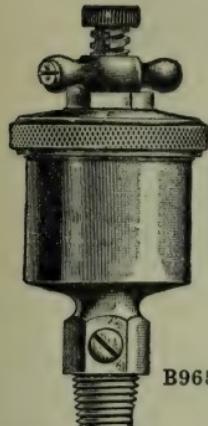
"Diamond" is $\frac{1}{8}$ " larger diameter, but height not so great as above.

IRON COMPRESSION GREASE CUPS—B964

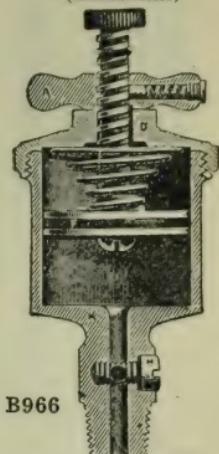


| Number..... | 1 | 2 | 3 | 4 |
|------------------------|-------|------|-------|------|
| Inside Diam....inches | 1 1/2 | 2 | 2 1/2 | 3 |
| Pipe Thread....." | 1/4 | 3/8 | 1/2 | 1/2 |
| Capacity... ....ounces | 1 1/2 | 3 | 6 | 10 |
| Iron.....each | 1.50 | 1.70 | 2.30 | 3.20 |

"DANDY"



B965

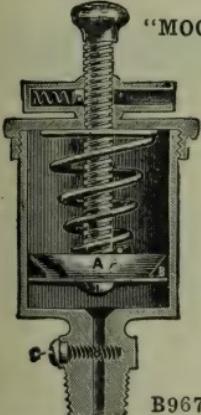
"IDEAL"
(Sectional)

**AUTOMATIC
COMPRESSION
GREASE CUPS**

Finished Brass

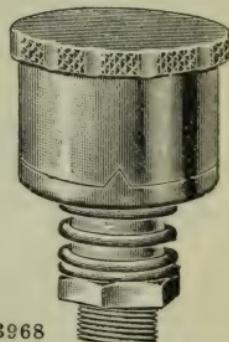
| Number | 00 | 0 | 1 | 2 | 3 | 4 | 5 |
|------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Price..... each | 1.50 | 2.00 | 2.50 | 3.20 | 4.30 | 6.00 | 12.50 |
| Outside Diam.(Ideal) inches | 1 $\frac{3}{8}$ | 1 $\frac{3}{4}$ | 2 | 2 $\frac{1}{4}$ | 3 $\frac{1}{4}$ | 3 $\frac{3}{8}$ | 4 $\frac{1}{4}$ |
| Pipe Thread | " | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ |
| Capacity (Grease).... ounces | $\frac{1}{3}$ | 1 | 1 $\frac{1}{2}$ | 3 | 6 | 10 | 18 |

"MOON"



B967

"RATCHET"

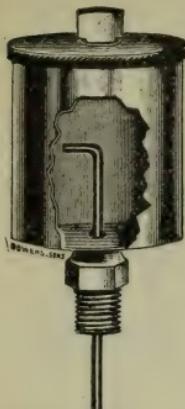


"MOON"
Finished Brass

| Number | 0 | 1 | 2 | 3 | 4 | 5 |
|------------------------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Price..... each | 1.50 | 2.00 | 2.50 | 3.20 | 4.30 | 9.00 |
| Inside Diameter..... inches | 1 | 1 $\frac{1}{2}$ | 2 | 2 $\frac{1}{8}$ | 2 $\frac{3}{4}$ | 3 $\frac{1}{2}$ |
| Pipe Thread..... " | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{1}{2}$ |
| Capacity (Grease).... ounces | $\frac{1}{3}$ | 1 | 1 $\frac{1}{2}$ | 2 $\frac{1}{2}$ | 5 $\frac{1}{2}$ | 10 |

RATCHET CUPS-B968

| Number..... | 000 | 00 | 0 | 1 | 2 | 3 |
|------------------------------------|---------------|---------------|-----------------|-----------------|---------------|-----------------|
| Finished Brass (Polished).... each | 1.05 | 1.25 | 1.50 | 1.90 | 2.50 | 3.40 |
| Rough Brass..... " | .90 | 1.10 | 1.35 | 1.70 | 2.30 | 3.10 |
| Rough Steel..... " | | .80 | .95 | 1.15 | 1.40 | 2.00 |
| Inside Diameter..... inches | $\frac{3}{4}$ | 1 | 1 $\frac{1}{4}$ | 1 $\frac{1}{2}$ | 2 | 2 $\frac{1}{2}$ |
| Shank Pipe Thread..... " | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ |
| Capacity (Grease).... ounces | $\frac{1}{4}$ | $\frac{1}{2}$ | $\frac{2}{3}$ | 1 | 2 | 3 $\frac{1}{2}$ |



TRACTION CRANK PIN GREASE CUP

B970

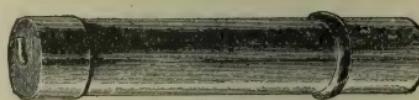
This Cup is a most economical crank pin oiler. The soft copper wire plunger is three-cornered and carries the grease down to the crank pin at every revolution. In putting it on, see that the plunger has a half-inch travel between cover and crank pin.

| Number | 1 | 2 | 3 | 4 |
|--------------------------|-----------------|-----------------|-----------------|-----------------|
| Diameter inches | 1 $\frac{1}{8}$ | 1 $\frac{3}{4}$ | 2 | 2 $\frac{1}{2}$ |
| Height over all | 3 | 3 $\frac{1}{4}$ | 3 $\frac{1}{2}$ | 4 $\frac{1}{4}$ |
| Pipe Thread.. inch | $\frac{1}{4}$ | $\frac{1}{4}$ | $\frac{1}{4}$ | $\frac{1}{2}$ |
| Capacity ounces | $\frac{1}{2}$ | 1 $\frac{1}{2}$ | 2 | 3 |
| Finished Brass..... each | 1.35 | 1.85 | 2.25 | 3.00 |

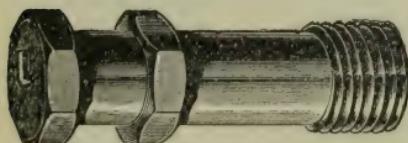
BRASS GREASE CUPS



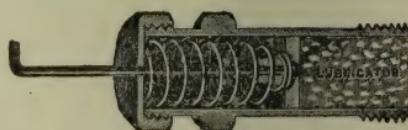
B975—Crank Pin Cup



B976—Shafting Cup



B977—Loose Pulley Cup



Sectional View of Cups

| | | | | |
|------------------------------|--------|---------------|---------------|---------------|
| Size, Diameter Outside | inches | $\frac{3}{8}$ | $\frac{5}{8}$ | $\frac{3}{4}$ |
| Pipe Thread..... | inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ |
| B975—Crank Pin Cup | each | 2.00 | 2.50 | 3.00 |
| B977—Loose Pulley Cup | " | .75 | 1.00 | 1.50 |

| | | | | | | |
|--------------------------------|-------------------------------|---------------------------------|----------------------|----------------------|----------------------|----------------|
| B976 Shafting Cup | Size, Diameter Outside...ins. | $\frac{1}{2}$ | $\frac{4}{5}$ | $\frac{7}{8}$ | 1 | $1\frac{1}{2}$ |
| | Size, Shaft.....inches | $\frac{3}{4}$ to $1\frac{1}{4}$ | 1 $\frac{1}{2}$ to 2 | 2 $\frac{1}{2}$ to 3 | 3 $\frac{1}{2}$ to 6 | 6 and up |
| Price | each | .15 | .20 | .25 | .30 | .50 |

| | | | | | | |
|---|--|---------------|---------------|---------------|---------------|----------------|
| Lubri- cants in Sticks | Diameter .....inches | $\frac{3}{8}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{7}{8}$ | $1\frac{1}{4}$ |
| | Price (in boxes 50 each)....per hundred | 2.00 | 2.50 | 4.00 | 5.00 | 8.00 |

Grade of lubricant suitable for various speeds. Shafting: 250 and less revolutions, M; to 450 revolutions, A; to 1000 and over, AA.

Grade of lubricant suitable for various speeds. Loose Pulleys: 250 and less revolutions, M; over 250 revolutions, A.

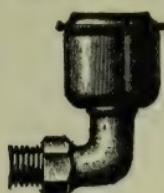
PLAIN BRASS OIL CUPS

PLAIN



B980

ELBOW SHANK



B981

TEE HANDLE



B982

| | | | | | | | | |
|-------------------|--------|----------------|---------------|----------------|----------------|----------------|----------------|----------------|
| Diameter | inches | $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{7}{8}$ | 1 | $1\frac{1}{8}$ | $1\frac{1}{4}$ | $1\frac{1}{2}$ |
| Size, Thread..... | inches | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{1}{4}$ | $\frac{1}{4}$ | $\frac{3}{8}$ |
| Plain | each | .25 | .30 | .35 | .40 | .50 | .60 | .90 |
| Elbow Shank..... | " | ..... | ..... | .75 | .85 | ..... | 1.00 | 1.40 |
| Tee Handle..... | " | ..... | ..... | .90 | 1.00 | ..... | 1.50 | 2.00 |
| Diameter | inches | $1\frac{3}{4}$ | 2 | $2\frac{1}{4}$ | $2\frac{1}{2}$ | $2\frac{3}{4}$ | 3 | ..... |
| Size, Thread..... | inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | $\frac{3}{4}$ | ..... |
| Plain | each | 1.25 | 1.75 | 2.25 | 2.75 | 3.50 | 4.00 | ..... |
| Elbow Shank..... | " | 1.85 | 2.40 | 3.00 | 3.80 | ..... | ..... | ..... |
| Tee Handle..... | " | 2.50 | 3.00 | 3.75 | 4.50 | ..... | ..... | ..... |

Open



B983

STYLE B

SELF-CLOSING OIL CUPS

Closed



B984

| Number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|------------------------|-------------|---------------|----------------|---------------|----------------|---------------|---------------|---------------|
| Size, Thread..... | inches | $\frac{1}{4}$ | $\frac{5}{16}$ | $\frac{3}{8}$ | $\frac{7}{16}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{4}$ |
| Number of Threads..... | per inch | 32 | 32 | 24 | 24 | 24 | 24 | Pipe |
| Price..... | per hundred | 7.00 | 9.50 | 10.70 | 12.50 | 16.00 | 22.00 | 30.00 |

Nos. 7 and 8 are fitted with Inner Tube and Wick.



BRASS GLOBE LOOSE PULLEY OILER

B985

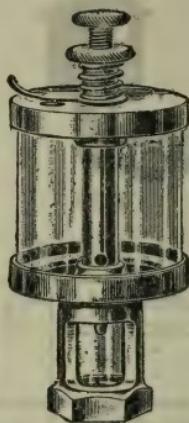
| Number | 0 | 1 | 2 | 3 | 4 |
|---------------------------|--------|---------------|----------------|----------------|----------------|
| Capacity | ounces | $\frac{1}{4}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | $1\frac{1}{4}$ |
| Diameter of Body...inches | | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | $1\frac{3}{4}$ |
| Rough Brass..... | each | .25 | .30 | .40 | .50 |

DETROIT GLASS OIL CUPS

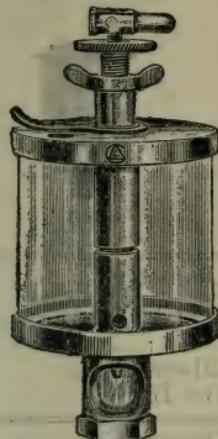
SET FEED



B986

SIGHT AND SET
FEED CUP

B987

SIGHT, SET, AND
STOP FEED

B988

FINISHED

| | | | | | | | | | | | |
|----------------------|------------------|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|----------------|
| Set | { Number | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | |
| Feed | { B986..... each | 1.30 | 1.50 | 1.70 | 1.90 | 2.10 | 2.45 | 3.25 | 4.80 | 7.00 | |
| Sight and | { Number | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | |
| Set Feed | { B987.....each | 2.30 | 2.50 | 2.80 | 3.00 | 3.25 | 3.70 | 4.50 | 6.55 | 8.75 | |
| Sight, Set | { Number | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | |
| and Stop Feed | { B988..each | 3.00 | 3.25 | 3.50 | 3.75 | 4.00 | 4.45 | 5.25 | 7.30 | 9.50 | |
| Dimen- | sions | Capacity ..ounces | $\frac{1}{2}$ | $\frac{5}{8}$ | 1 | $1\frac{1}{8}$ | $2\frac{1}{2}$ | 4 | 5 | 10 | 18 |
| | | Diam. of Glass, in. | $1\frac{1}{8}$ | $1\frac{1}{4}$ | $1\frac{1}{2}$ | $1\frac{3}{8}$ | 2 | $2\frac{1}{4}$ | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ |
| | | Height of Glass " | 1 | $1\frac{1}{8}$ | $1\frac{3}{8}$ | $1\frac{1}{8}$ | $1\frac{7}{8}$ | $2\frac{1}{8}$ | $2\frac{3}{8}$ | 3 | 4 |
| | | Size, Thread . " | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{1}{4}$ | $3\frac{3}{8}$ | $\frac{3}{8}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{1}{2}$ |

Nickel Plated Oilers to order, at special price.

TIN SHAFTING OIL CUPS

B989



| Number | Capacity | Diameter of largest Part in Inches | Height in Inches | Tubes | Prices Per Dozen |
|--------|--------------------|------------------------------------|------------------|--------------------------------|------------------|
| 1 | 1 oz. | 2 | $1\frac{3}{4}$ | $\frac{1}{4}$ to $\frac{1}{2}$ | 2.50 |
| 2 | 2 oz. | $2\frac{3}{8}$ | $2\frac{1}{2}$ | $\frac{3}{8}$ to $\frac{3}{4}$ | 3.50 |
| 3 | $2\frac{1}{2}$ oz. | 3 | 3 | $\frac{1}{2}$ to $\frac{7}{8}$ | 4.50 |

ADAPTATION OF THIS STYLE OF CUP

To shafting of every description. Especially adapted to use in place of the candles applied to small shafting. All sizes of Tubes correspond to all sizes of candles.

When bushed, \$3.00 per doz. extra on each size additional.

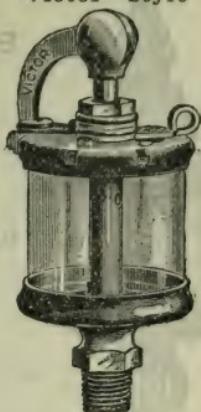
GLASS OIL CUPS

SCREW TOP
"Miami" Style

B995

SLIDE TOP
"Pioneer" Style

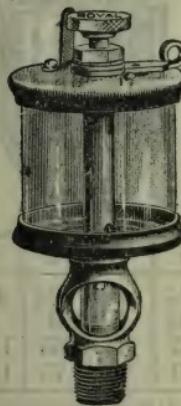
B996

INDEX TOP
"Victor" Style

B997

| Number | 000 | 00 | 0 | 1 | 1½ | 2 | 3 | 4 | 5 | 6 | 8 |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|
| Capacity .....ounces | 1/4 | 1/2 | 5/8 | 1 | 1 1/2 | 2 1/2 | 4 | 5 | 10 | 18 | 34 |
| Ont. Diam. Glass.....in. | 1 | 1 1/8 | 1 1/4 | 1 1/2 | 1 3/4 | 2 | 2 1/4 | 2 1/2 | 3 | 3 1/2 | 4 1/4 |
| Height of Glass | 7/8 | 1 | 1 1/8 | 1 1/8 | 1 5/8 | 1 7/8 | 2 1/8 | 2 3/8 | 3 | 4 | 5 |
| Size Thread....." | 7/16 | 1/2 | 5/8 | 3/4 | 7/8 | 5/8 | 3/8 | 5/16 | 1/2 | 1/2 | 3/4 |
| B995 Screw Top, Fin....ea. | .70 | .75 | .80 | 1.00 | 1.25 | 1.50 | 1.90 | 2.40 | 3.10 | 4.00 | ... |
| B996 Slide Top, Fin...." | .70 | .75 | .80 | 1.00 | 1.25 | 1.50 | 1.90 | 2.40 | 3.10 | 4.00 | 8.50 |
| B997 Index Top, Fin...." | ..... | 1.00 | 1.20 | 1.45 | 1.75 | 2.15 | 2.70 | 3.40 | 4.30 | 9.25 | |

Nickel-Plated to order at special price.

SLIDE TOP
"Royal" Style

B998

INDEX TOP
"Crown" Style

B999

SIGHT FEED
OILERS

| Number | 000 | 00 | 0 | 1 | 1½ | 2 | 3 | 4 | 5 | 6 | 8 |
|--------------|-----|------|------|------|------|------|------|------|------|------|-------|
| Each | .95 | 1.10 | 1.25 | 1.50 | 1.75 | 2.10 | 2.55 | 3.15 | 3.90 | 4.80 | 10.00 |

Size of shank, dimensions of glass and capacity same as listed top of page.

Nickel-Plated to order at special price.

For extra Glasses and Cork Washers, see page 204.

LEVER UP,
CUP FEEDING

LEVER DOWN,
FEED STOPPED

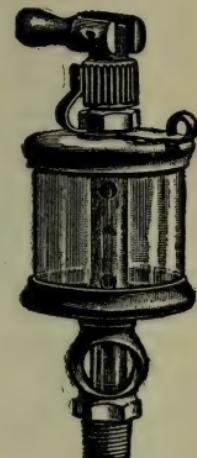


SNAP LEVER SIGHT FEED GLASS OIL CUPS

"SENTINEL" STYLE

Unequalled for Dynamo and Engine Use

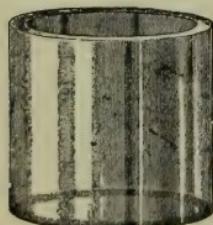
Nickel Plated to order at special price.



B1000

| Number | 0 | 1 | 1½ | 2 | 3 | 4 | 5 | 6 | 8 |
|--------------------------|-------|-------|-------|-------|-------|-------|------|-------|-------|
| Finished .....each | 3.00 | 3.25 | 3.50 | 3.75 | 4.25 | 5.25 | 7.25 | 9.25 | 20.00 |
| Capacity.....ounces | 5/8 | 1 | 1 1/2 | 2 1/2 | 4 | 5 | 10 | 18 | 34 |
| Outside Diam. Glass..in. | 1 1/4 | 1 1/2 | 1 3/4 | 2 | 2 1/4 | 2 1/2 | 3 | 3 1/2 | 4 1/4 |
| Height of Glass....." | 1 1/8 | 1 3/8 | 1 5/8 | 1 7/8 | 2 1/8 | 2 3/8 | 3 | 4 | 5 |
| Size, Thread" | 1/8 | 1/4 | 1/4 | 3/8 | 3/8 | 3/8 | 1/2 | 1/2 | 3/4 |

CYLINDRICAL GLASS



GLASSES AND CORK WASHERS

For Glass Oil Cups

B1010

URN-SHAPED GLASS



B1011

| Number | 000 | 00 | 0 | 1 | 1½ | 2 | 3 | 4 | 5 | 6 | 8 |
|----------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-----|-------|-------|
| Outside Diam. Glass...ins. | 1 | 1 1/8 | 1 1/4 | 1 1/2 | 1 3/4 | 2 | 2 1/4 | 2 1/2 | 3 | 3 1/2 | 4 1/4 |
| Height Cylind'l " " | 7/8 | 1 | 1 1/8 | 1 3/8 | 1 5/8 | 1 7/8 | 2 1/8 | 2 3/8 | 3 | 4 | 5 |
| Glasses.....each | .05 | .06 | .08 | .10 | .10 | .12 | .15 | .25 | .35 | .65 | 1.50 |
| Cork Washers...per dozen | .15 | .18 | .24 | .30 | .36 | .40 | .45 | .50 | .60 | .75 | 1.50 |

Urn-Shaped Glass shipped direct from factory only. Height differs from above.

SPECIAL SIZE CYLINDRICAL GLASSES

| Outside Diameter.... |inches | 7/8 | 1 1/8 | 1 1/4 | 2 | 2 1/8 | 2 1/4 | 3 1/8 | 4 1/8 |
|----------------------|-------------|-----|-------|-------|-------|-------|-------|-------|-------|
| Height..... |inches | 1 | 1 3/8 | 1 1/2 | 1 3/4 | 2 1/8 | 2 1/2 | 2 1/4 | 2 5/8 |
| Each ..... | ..... | .08 | .10 | .12 | .15 | .25 | .35 | .40 | 1.50 |

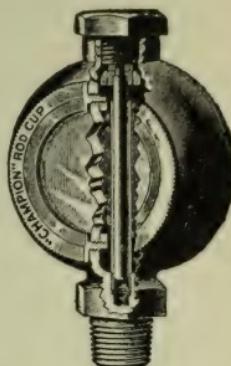


CHAMPION ROD OIL CUPS

Suitable for all Movable Bearings

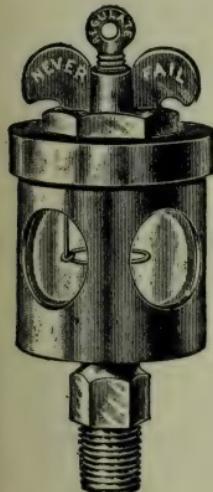
Starts to feed as soon as machinery is put in motion. Stops feeding when movement of machinery ceases.

B1012



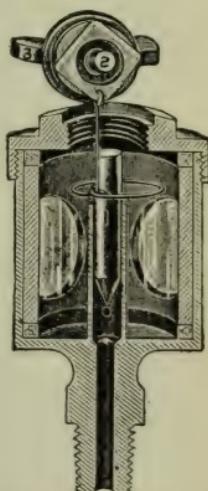
| Number..... | 1 | 2 | 3 | 3½ | 4 |
|-----------------------------|------|------|------|------|------|
| Capacity.....ounces | 1¼ | 2½ | 5 | 8 | 12 |
| Outside Diameter.....inches | 2 | 2½ | 3 | 3½ | 4 |
| Width....." | 1½ | 1¾ | 2¼ | 2½ | 3¼ |
| Size Thread....." | ¼ | ¾ | ½ | ½ | ¾ |
| Price, Finished.....each | 1.40 | 2.00 | 2.60 | 3.50 | 4.00 |
| " Extra Glasses....." | .05 | .08 | .10 | .12 | .15 |
| " " Corks.....per dozen | .20 | .30 | .40 | .50 | .60 |

Nickel Plated to order at special price.



"NEVER FAIL" CRANK PIN OILEP

B1013



FINISHED BRASS

| Size Number..... | 1 | 2 | 3 | 4 |
|--------------------------------------|-------|-------|-------|-------|
| Each..... | 1.50 | 1.75 | 2.00 | 2.50 |
| Outside diameter of glass.....inches | 1 1/8 | 1 3/8 | 1 5/8 | 2 1/4 |
| Height of Glass....." | 1 1/8 | 1 3/8 | 1 5/8 | 2 1/8 |
| Capacity.....ounces | 5/8 | 1 | 1 1/4 | 2 1/4 |
| Pipe Thread of Shank..... | 1/4 | 1/4 | 3/8 | 3/8 |

Nickel Plated to order at special price.

LUNKENHEIMER

PATENT DRIP AND SIGHT-FEED VALVES,
WIPER CUPS, ETC.

Oiling Devices for Engine and Machinery Bearings.

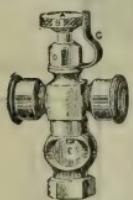
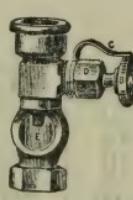
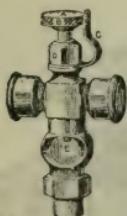
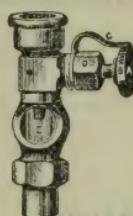
Fig. 0499.
Cross Drip Valve.Fig. 0690.
Straight Drip Valve.Fig. 0500.
Angle Drip Valve.Fig. 0296.
Corner Drip Valve.Fig. 0688.
Cross Sight-Feed
Valve.Fig. 0501.
Straight Sight-Feed
Valve.Fig. 0502.
Angle Sight-Feed
Valve.Fig. 0964.
Corner Sight-Feed
Valve.Fig. 0689.
Cross Sight-Feed
Valve, with Union.Fig. 0593.
Straight Sight-Feed
Valve, with Union.Fig. 0594.
Angle Sight-Feed
Valve, with Union.Fig. 0965.
Corner Sight-Feed
Valve, with Union.Fig. 0503.
Adjustable Wick
Wiper Cup.Fig. 0504.
Adjustable Wick
Wiper Cup
with Elbow ShankFig. 0578.
Adjustable Wiper
Cup for Crank
PinFig. 0579.
Adjustable Plain
Wiper Cup with
Elbow Shank.Fig. 0505
Plain Wiper
Cup.

Fig. 0969.

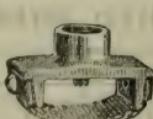
Adjustable Plain
Wiper Cup
with Straight Shank.

Fig. 0552

Horizontal Wick
Wiper Cup

Fig. 0506

Oil Cup Wiper
Tip.

Fig. 0507.

Drip Trough.

All valves illustrated on preceding page are made in $\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$ and $\frac{1}{2}$ -inch sizes. Drip valve outlets are threaded for $\frac{1}{4}$ -inch O. D. brass tubing, 27 threads. Generally $\frac{1}{8}$ -inch valves are used, and unions on sight feed valves tapped for $\frac{1}{4}$ -inch pipe.

DRIP VALVES, WIPERS, ETC.

| Size..... | inches | FINISHED BRASS | | NICKEL PLATED | |
|--|--------|--|---------------|--|---------------|
| | | $\frac{1}{8}$, $\frac{1}{4}$ or $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{1}{8}$, $\frac{1}{4}$ or $\frac{3}{8}$ | $\frac{1}{2}$ |
| Fig. 0499 Cross, or 0296 Corner Drip Valves, ea. | | 1.50 | 1.60 | 1.75 | 1.85 |
| 0690 Straight, or 0500 Angle " | " " | 1.25 | 1.40 | 1.50 | 1.65 |
| 0688 Cross, or 0964 Corner " | " " | 2.30 | 3.20 | 2.60 | 3.50 |
| 0501 Straight, or 0502 Angle " | " " | 2.00 | 3.00 | 2.25 | 3.25 |
| 0689 Cross, or 0965 Corner " | " " | 2.80 | 3.70 | 3.10 | 4.00 |
| 0593 Straight, or 0594 Angle " | " " | 2.50 | 3.50 | 2.80 | 3.80 |
| 0969, 0503 and 0578 Straight Wiper Cups " | | 2.50 | 3.00 | 3.00 | 3.50 |
| 0579 and 0504 Elbow " | | 3.00 | 3.50 | 3.50 | 4.00 |
| 0552 Horizontal Wick " | " " | 2.00 | 2.30 | 2.30 | 2.60 |
| 0506 Wiper Tips " | " " | .40 | .50 | .50 | .60 |

FIG. 0505. PLAIN WIPER CUP

| Pipe Thread | O. Diameter | Brass | Nickel Pl. |
|---------------|-----------------|-------|------------|
| $\frac{1}{4}$ | 1 $\frac{1}{4}$ | 1.00 | 1.20 |
| $\frac{3}{8}$ | 1 $\frac{1}{2}$ | 1.50 | 1.75 |
| $\frac{1}{2}$ | 2 | 2.00 | 2.40 |

FIG. 0507. DRIP TROUGHS

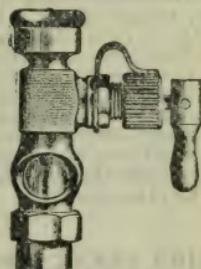
| Length | Pipe Thread | Rough | Finished | Nickel Pl. |
|----------|---------------|-------|----------|------------|
| 3 inches | $\frac{1}{4}$ | .75 | 1.00 | 1.25 |
| 5 inches | $\frac{3}{8}$ | 1.00 | 1.50 | 2.00 |
| 7 inches | $\frac{1}{2}$ | 1.50 | 2.00 | 2.75 |
| 9 inches | $\frac{1}{2}$ | 2.00 | 2.75 | 3.50 |



B1040. Plain

SNAP LEVER VALVES

Any valve on opposite page can be furnished with snap lever at special price. Use same list price, also describe by same figure, adding the words "with Snap Lever."



B1041. Sight Feed



B1042



B1043

PRESSURE SIGHT-FEED VALVES

Oiling Devices for Engine and Machinery Bearings



B1044

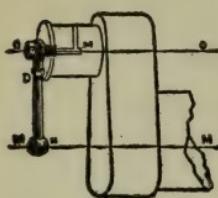


B1045

Made with or without Union. Can furnish with outlet smaller than inlet if desired.

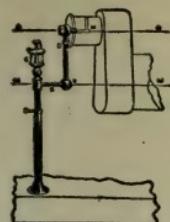
| Finish..... | inches | FINISHED BRASS | | | | NICKEL PLATED | | | |
|--|--------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ |
| Straight and Angle Sight-Feed Valve.....each | | 3.60 | 4.20 | 4.50 | 5.30 | 4.00 | 4.60 | 5.00 | 5.90 |
| With Union....." | " | 4.20 | 4.50 | 5.00 | 6.10 | 4.60 | 5.00 | 5.60 | 6.80 |
| Cross and Corner Sight-Feed Valve....." | " | 4.20 | 4.50 | 5.00 | 6.10 | 4.60 | 5.00 | 5.60 | 6.80 |
| With Union....." | " | 4.50 | 5.00 | 6.30 | 6.80 | 5.00 | 5.60 | 7.00 | 7.50 |

PLAIN OILER ARM



B1046

OILER ARM COMPLETE



B1047

OILING DEVICES

The length of oiler arm is always half the length of stroke of engine, and the above prices on the complete device are based on furnishing a stand of ordinary height; but where specifications call for stands higher than 24 inches for No. 1 device, 36 inches for No. 2, and 40 inches for No. 3, an additional charge will be made to cover the extra height.

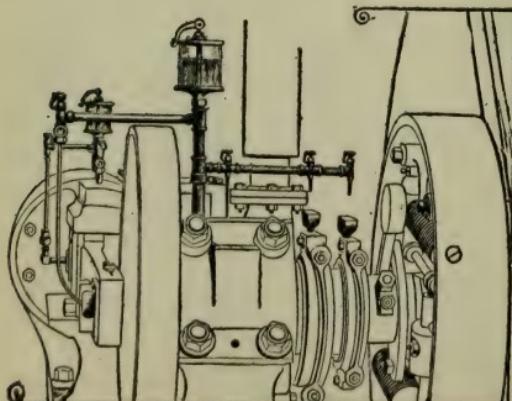
| Number | 1 | 2 | 3 |
|---|-----------------|-----------------|-----------------|
| Length of Stroke.....inches | Up to 16 | Up to 30 | Up to 60 |
| Pipe Thread on Bolt (O) | $\frac{1}{8}$ " | $\frac{3}{8}$ " | $\frac{1}{2}$ " |
| Price, Plain Oiler Arms, Brass.....each | 6.00 | 7.00 | 9.00 |
| " " " Nickel Plated " | 7.00 | 8.00 | 11.00 |
| " Complete Device, Brass....." | 15.00 | 17.00 | 21.00 |
| " " " Nickel Plated " | 18.00 | 20.50 | 25.00 |

The Plain Oiler Arm is intended to be used as an auxiliary to the Crank Pin Cup, to afford an extra and direct means of lubricating the crank pin while the engine is in motion by squirting oil with an oil can through the hole in ball H. In ordering these, give stroke of engine.

The Complete Oiler Arm with Adjustable Oil Cup Stand gives direct continuous lubrication to the crank pin from the oil cup on the floor stand. In ordering these, give stroke of engine and distance from center of crank shaft to floor.

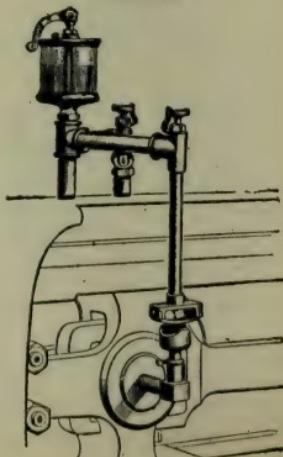
When desired, the complete device can be used for feeding grease instead of oil. In such cases we furnish, without extra charge, a grease cup in place of the oil cup. When not otherwise specified, we will send an oil cup of a size proportionate to that of the oiler arm.

OILING CRANK PIN, PILLOW BLOCK, AND ECCENTRICS FROM ONE CUP

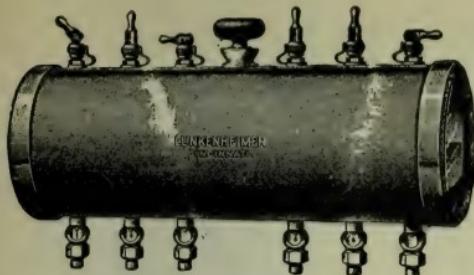


B1048

CROSS HEAD AND SLIDE OILER



B1049



B1050

MULTIPLE OILER

For Bearings

Can Also be Arranged for Cylinder Lubricator When so Ordered

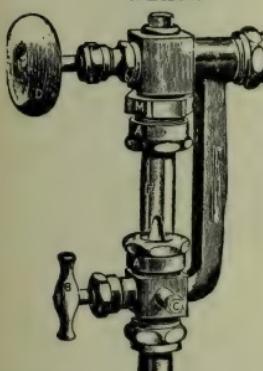
| Capacity | 1 Pt. | 1 Qt. | $\frac{1}{2}$ Gal. | 1 Gal. | 2 Gal. | 3 Gal. |
|--------------------------------|-------|-------|--------------------|--------|--------|--------|
| Reservoirs, Finished.....each | 8.40 | 11.60 | 15.00 | 20.00 | 26.60 | 36.60 |
| Sight-Feeds, " | 1.35 | 1.40 | 1.50 | 1.55 | 1.60 | 1.70 |
| Finished Brackets.....per pair | 1.35 | 1.70 | 2.00 | 2.35 | 2.70 | 3.30 |

Nickel Plated, extra.

Can be furnished with device for operating several valves simultaneously, as illustrated B1051.



B1051

INDEPENDENT SIGHT FEEDS**PLAIN**

B1052

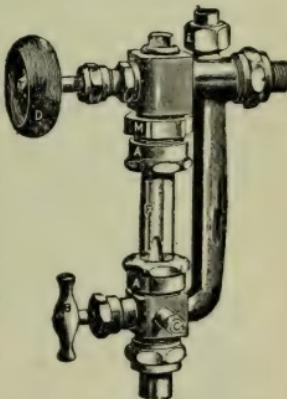
"Independent" Sight Feeds are intended for use in connection with closed pressure tank systems for supplying oil to steam chests and cylinders of steam engines.

The Plain Sight Feed is intended for use on simple engines and should be connected above the throttle valve.

The Sight Feed with Equalizing Attachment can be attached on the steam chests of simple or compound engines.

Size Shank $\frac{3}{8}$ -inch pipe size.
Oil Connections $\frac{1}{4}$ -inch.
Finished B1052, 6.00; B1053, 6.50.

Nickel Plated, 50c. extra.

WITH EQUALIZING ATTACHMENT

B1053

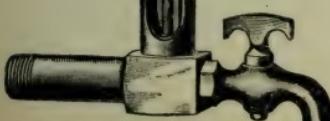
OIL GAUGES

With Revoluble Shield. Finished

B1054

| Thread, Pipe Size... inches | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ |
|-----------------------------|---------------|---------------|---------------|---------------|
| With Drain Cock.....each | .80 | .90 | 1.05 | 1.40 |
| Without Drain Cock .. " | .40 | .50 | .65 | 1.00 |

Nickel Plated, extra.

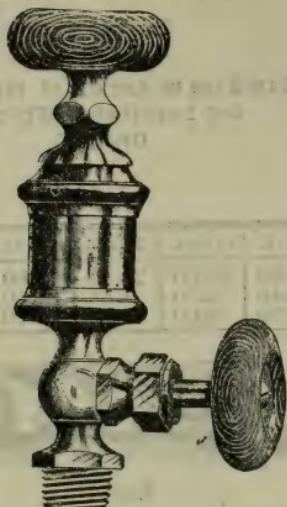


WITH DRAIN COCK

PLAIN BRASS LUBRICATORS

PLAIN PLUM

WITH COCK AND TUBE

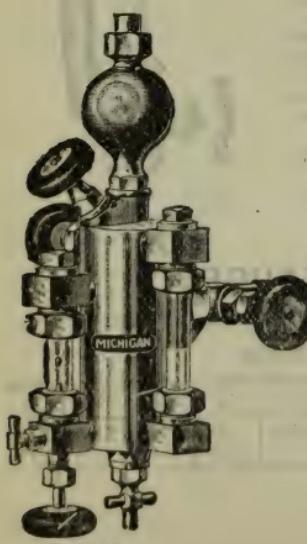


B1060



B1061

| Diameter...inches | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | $1\frac{3}{4}$ | 2 | $2\frac{1}{4}$ | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | |
|-----------------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|----------------|---------------|-------|
| Pipe Thread...in. | $\frac{3}{8}$ | $\frac{3}{8}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | $\frac{3}{4}$ | $\frac{3}{4}$ | |
| Capacity...ounces | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | $2\frac{1}{2}$ | 4 | 5 | 10 | 18 | 24 | |
| Price.....each | 2.00 | 2.20 | 2.40 | 2.60 | 2.90 | 3.25 | 3.75 | 4.75 | 7.00 | 10.00 | |
| With Cock and Tube | " | 3.00 | 3.20 | 3.40 | 3.60 | 3.90 | 4.25 | 4.75 | 5.75 | 8.00 | 11.00 |



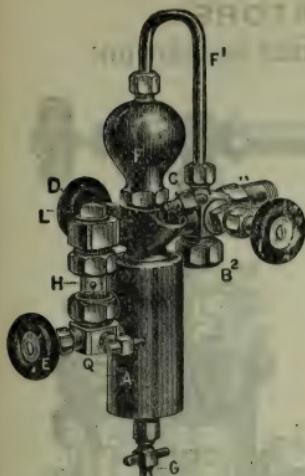
B1062

"CYCLONE"
DOUBLE CONNECTION LUBRICATOR

B1062

| Pints..... | $\frac{1}{3}$ | $\frac{1}{2}$ | 1 | $2\frac{1}{2}$ | 4 | 8 |
|------------------|---------------|---------------|---------------|----------------|---------------|---------------|
| Thread ...inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | $\frac{3}{4}$ |
| Each | 13.30 | 15.00 | 20.00 | 26.75 | 38.35 | 60.00 |

DETROIT SINGLE CONNECTION
SIGHT FEED LUBRICATOR



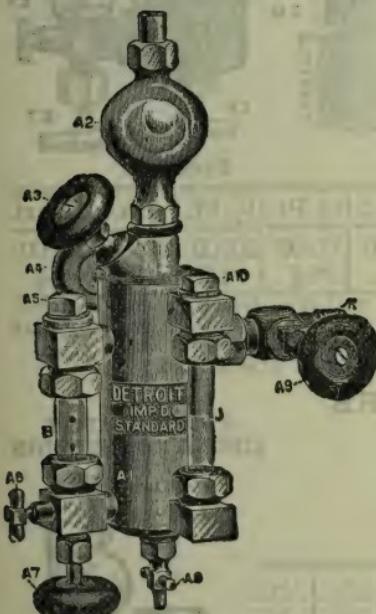
Nickel Plated Lubricators Special

B1063

| Capacity | pints | $\frac{1}{4}$ | $\frac{1}{3}$ | $\frac{1}{2}$ | 1 | 2 |
|---------------------|-------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Thread Pipe Size... | | $\frac{1}{2}$ in. |
| Finished | each | 15.00 | 17.00 | 20.00 | 28.00 | 42.00 |

Nickel Plated to order at special price.

DETROIT
STANDARD DOUBLE CON-
NECTION SIGHT FEED
LUBRICATOR



Nickel Plated Lubricators Special

B1064

| Capacity | $\frac{1}{3}$ Pt. | $\frac{1}{2}$ Pt. | 1 Pt. | 1 Qt. | $\frac{1}{2}$ Gal. | 1 Gal. |
|------------------------|----------------------|----------------------|-------------------|-------------------|-----------------------|-------------------|
| Thread Pipe Size | $\frac{1}{2}$ in. | $\frac{1}{2}$ in. | $\frac{1}{2}$ in. | $\frac{1}{2}$ in. | $\frac{3}{4}$ in. | $\frac{3}{4}$ in. |
| Finished | each | 17.00 | 22.00 | 30.00 | 45.00 | 60.00 |

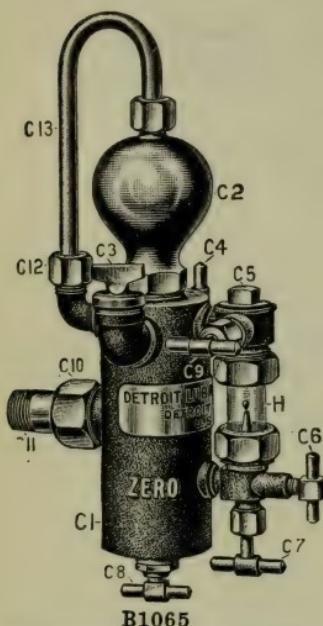
Nickel Plated to order at special price.

Repairs can be furnished. Orders should indicate part wanted by letters and figures shown on illustration, and state size of lubricator, also whether for single connection or double connection lubricator.

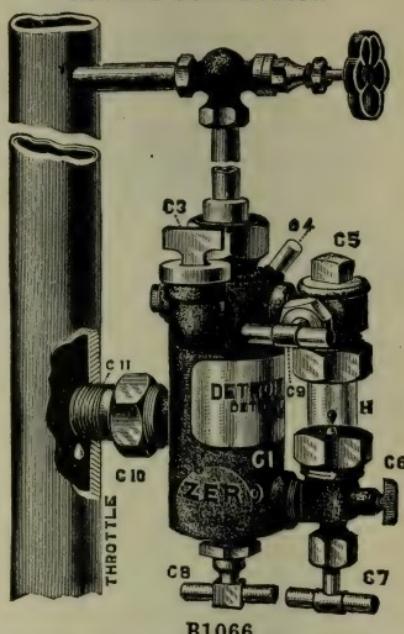
DETROIT ZERO LUBRICATORS

SINGLE CONNECTION

DOUBLE CONNECTION



B1065



B1066

| Size | $\frac{1}{4}$ Pt. | $\frac{1}{3}$ Pt. | $\frac{1}{2}$ Pt. | Pint | Quart |
|--------------------------------------|-------------------|-------------------|-------------------|---------------|---------------|
| Bronzed Body, Finished Trimmings. | 15.00 | 17.00 | 20.00 | 28.00 | 42.00 |
| Pipe Thread on S'g'l Connection .in. | * $\frac{1}{2}$ | * $\frac{1}{2}$ | * $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ |

Oil in this cup is kept warm by the steam, and will flow freely in cold weather. Order repairs by indicating letters and numbers as shown on illustration, state size of lubricator, and whether single or double connection.

*Double Connection, $\frac{1}{4}$ pt., $\frac{1}{3}$ pt. and $\frac{1}{2}$ pt. have $\frac{1}{2}$ in. pipe thread.

LUBRICATORS

"JUNIOR"



B1068

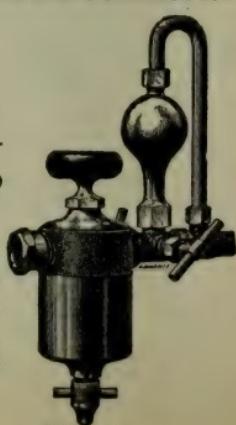
SWIFT CLASS F
SINGLE CONNECTION

"JUNIOR"

| Pints | $\frac{1}{4}$ | $\frac{1}{3}$ | $\frac{1}{2}$ |
|-------------------|---------------|---------------|---------------|
| Pipe Thread | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{2}$ |
| Each | 7.00 | 8.00 | 10.00 |

SWIFT SINGLE CONNECTION

| Pints | $\frac{1}{4}$ | $\frac{1}{3}$ | $\frac{1}{2}$ | 1 |
|------------------|---------------|---------------|---------------|---------------|
| Pipe Thread..... | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{8}$ | $\frac{1}{2}$ |
| Each | 3.50 | 3.75 | 4.00 | 6.00 |

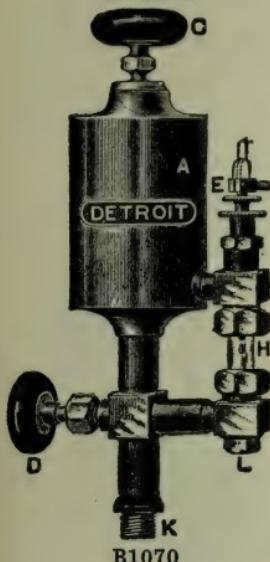


B1069

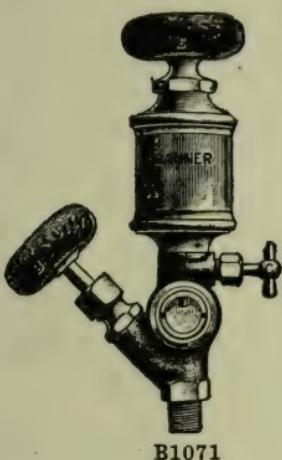
BRASS SIGHT FEED LUBRICATORS

For Gas, Gasoline, or Oil Engines, Air Compressors, etc.

“DETROIT”



“BANNER”



“VULCAN,” FORCE FEED

**“DETROIT”**

| Capacity..... | ¼ Pint | ½ Pint | ½ Pint | 1 Pint | 1 Quart |
|--------------------------|--------|--------|--------|--------|---------|
| Pipe Thread.....inches | ¾ | ½ | ½ | ½ | ½ |
| Price, Finished.....each | 15.00 | 17.00 | 20.00 | 28.00 | 42.00 |

“ Nickel Plated. ” 18.00 20.00 23.00 32.00 47.00

“BANNER”

| Diameter.....inches | 1½ | 1¾ | 2 | 2¼ | 2½ | 3 | 3½ |
|--------------------------------------|------|------|------|------|------|-------|-------|
| Pipe Thread.....inches | ¾ | ¾ | ½ | ½ | ½ | ½ | ¾ |
| Capacity.....ounces | 1½ | 2½ | 3½ | 4½ | 6 | 10 | 18 |
| Price, Finished.....each | 3.50 | 4.00 | 5.00 | 6.00 | 8.00 | 10.00 | 12.00 |
| “ Nickel Plated. ” | 4.20 | 5.00 | 6.00 | 7.25 | 9.50 | 12.00 | 14.00 |
| “ Extra Sight Feed Glasses..per doz. | 1.20 | 1.20 | 1.20 | 1.20 | 1.20 | 1.20 | 1.20 |

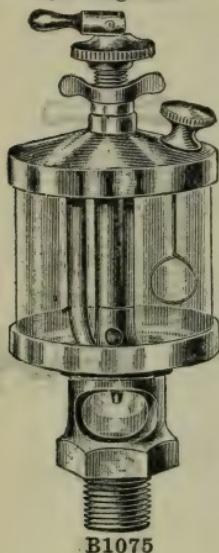
“VULCAN,” FORCE FEED

| Outside Diameter.....inches | 2 | 2½ | 3¼ | 3½ |
|-----------------------------|------|------|------|-------|
| Size, Thread.....inches | ¾ | ¾ | ¾ | ½ |
| Capacity.....ounces | 1½ | 3 | 4½ | 6½ |
| Price, Finished.....each | 5.00 | 6.00 | 8.00 | 10.00 |
| “ Nickel Plated. ” | 6.00 | 7.25 | 9.50 | 12.00 |

The “Vulcan” Force Feed Lubricator is intended for feeding heavy oils when cold to Gas Engines and Air Compressor Cylinders. The spring-actuated piston causes a force feed. It is also recommended for use on bearings requiring heavy oil. Do not feed grease.

BRASS LUBRICATORS

"EXPLOSO" GLASS
For Gas, Gasoline, or
Oil Engines



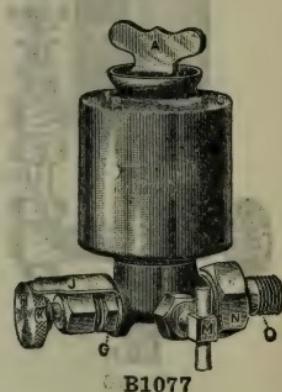
B1075

GRAPHITE AUTOMATIC
SIGHT FEED
For Steam Engines
and Pumps



B1076

STEAM
AUTOMOBILE
CYLINDER
LUBRICATOR



B1077

"EXPLOSO"

| Number | 2 | 3 | 4 | 5 | 6 |
|----------------------------------|------|------|------|------|-------|
| Capacity ounces | 2½ | 4 | 5 | 10 | 18 |
| Height of Glass inches | 1½ | 2½ | 2¾ | 3 | 4 |
| Diam. " " " " | 2 | 2¼ | 2½ | 3 | 3½ |
| Pipe Thread | ¾ | ¾ | ¾ | ½ | ½ |
| Price Finished each | 5.00 | 5.50 | 6.50 | 9.00 | 11.50 |
| " Extra Glasses " | .12 | .15 | .25 | .35 | .65 |

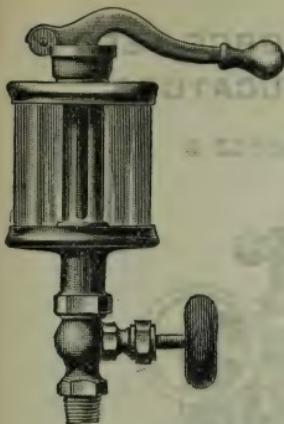
" GRAPHITE "

| Number | 1 | 2 | 3 |
|--------------------------------------|-------|-------|-------|
| Pipe Thread inches | ¾ | ½ | ½ |
| Capacity (Graphite) ounces | 3 | 5 | 8 |
| Price, Finished each | 10.00 | 12.00 | 16.00 |
| " Nickel Plated " | 11.00 | 14.00 | 18.00 |

The "Graphite" Sight Feed Lubricator is designed for feeding Powdered Graphite. The graphite is fed automatically and continuously in desired quantities, and visibly, by passing it through a sight feed. The Lubricator requires but one connection to the cylinder. It is not advisable to use Graphite alone; it is good practice therefore to use in connection with the "Graphite" Lubricator either an Oil Pump or Sight Feed Lubricator.

AUTOMOBILE LUBRICATORS

| Number | 1 | 2 | 3 |
|--------------------------------|-------|-------|---------|
| Extreme Width inches | 2 5/8 | 2 7/8 | 3 |
| " Length " | 3 1/2 | 3 3/8 | 3 5/8 |
| " Height " | 4 1/2 | 6 1/5 | 7 11/16 |
| Pipe Thread | ¼ | ¾ | ¾ |
| Capacity ounces | 4 | 6 | 8 |
| Price, Rough each | 2.70 | 4.00 | 5.20 |
| " Finished " | 3.30 | 4.40 | 5.50 |
| " Nickel Plated " | 3.90 | 5.20 | 6.60 |



HAND CYLINDER OIL PUMPS

Lever Handle, Glass Body

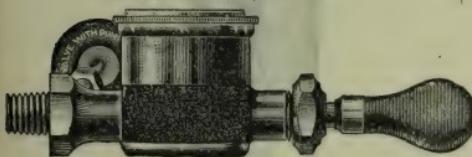
| Number | 507 | 508 | 509 | 510 |
|--------------------------|-------|--------|-------|-------|
| Capacity..... | 4 oz. | 10 oz. | Pint | Quart |
| Diameter of Glass..inch. | 2 3/8 | 3 1/8 | 3 1/2 | 4 1/8 |
| Height " " " | 2 3/4 | 3 5/8 | 4 | 5 1/8 |
| Pipe Thread.... " | 3/8 | 1/2 | 1/2 | 1/2 |
| Finished.....ea. | 7.50 | 10.00 | 12.00 | 16.00 |

Nickel Plated, extra,

B1078

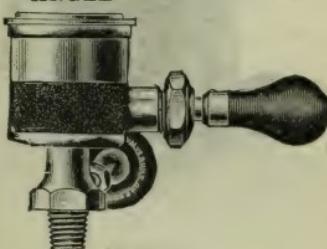
BRASS OIL PUMPS

HORIZONTAL



B1079

ANGLE

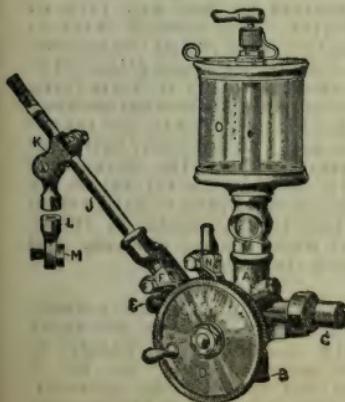


B1080

| | | | |
|---|-------------------|-------------------|-------|
| With $\frac{3}{8}$ " Pipe Thread. Capacity..... | $\frac{1}{4}$ Pt. | $\frac{1}{2}$ Pt. | 1 Pt. |
| Price..... each | 3.50 | 5.00 | 7.50 |

Strainer in top, add 15c. Nickel Plated is extra.

SINGLE FEED
With Glass Cup



B1081

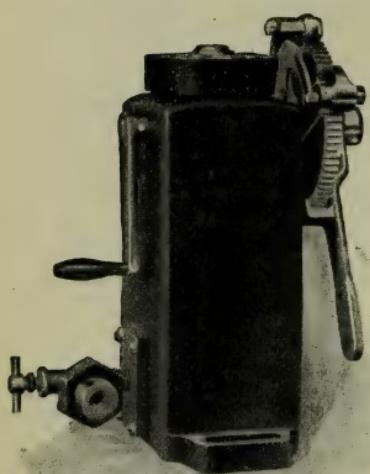
MECHANICAL OIL PUMPS

| | | |
|--|------|-------|
| With Quart Cup..... | each | 24.00 |
| .. Pint | " | 19.00 |
| Without | " | 16.00 |
| Double Feed with Quart Cup..... | " | 30.00 |
| Single Feed Pump with Compression Cup B966 for Heavy Oils | each | 24.00 |

The Double Feed has two stop feed levers on cup.
Nickel Plated, extra.

KIPP VALVELESS LUBRICATORS

STYLE D—SINGLE



B1090

Finished in Black. Capacity 3 Pints

| | | |
|------------------------------------|-----|-------|
| Style D, Single, Black..... | ea. | 10.00 |
| " " " Nickel Plated " | | 12.00 |
| Oil Gauge, on any style extra..... | | 1.00 |

STYLE D, DOUBLE

Black, \$12.00. Nickel Plated, \$15.00.

The Double Lubricator is of greater capacity than the Single. It will positively oil both cylinders of a double engine independently. The two pumps are driven from one shaft, but each independent of the other.

The ratchet connection will be furnished the same as illustrated on Style D single, with the same style of attachment for feed pipe.

This double pump has been used by some parties for oiling the cylinder boxes on a separator.

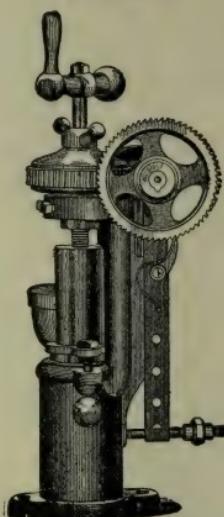
STYLE D, JUMBO

Has large pumping capacity, for engines doing extra heavy work.

Black. Single, \$10.00; Double, \$12.00.

KIPP FORCE FEED LUBRICATORS

STYLE B



B1091

Price, \$12.00.

This lubricator will work in any temperature and is especially recommended for engines in temperatures where oil will not remain in a liquid state.

This lubricator has a cut worm gear and shaft, the worm shaft running in babbittted boxes, and is provided with ample regulation to feed any type of traction engine. The ratchet lever is driven from the valve rod of the engine. This turns the ratchet wheel attached to the worm shaft and this in turn turns the worm gear, which is located between two discs, held in position by the thumb screw at the top. As this gear turns the threaded upright shaft, the plunger is forced down, forcing the oil out to the engine, feeding it a spray of oil at each stroke. When the lubricator is empty the friction discs release the gear and the lubricator stops working.

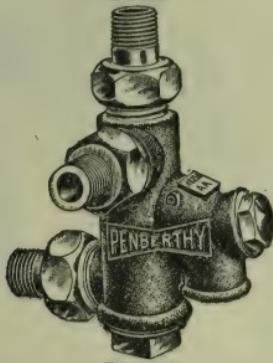
To refill: With plunger at bottom, fill the oil reservoir and open the angle valve at the bottom. Turn handle at top, which raises plunger, the oil is drawn into the space under plunger. When plunger is up, close angle valve and tighten thumb nut and lubricator is again ready for work.

THE PENBERTHY AUTOMATIC INJECTOR

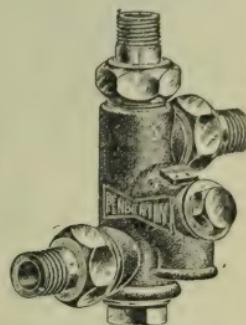
SPECIAL PATTERN
Cut No. 49. Style Left
and Right. Suction
Left. Discharge
Right



**REGULAR STOCK
PATTERN**
Cut No. 47, Stock Injector.
Suction Left. Discharge
Back



SPECIAL PATTERN
Cut No. 50. Style Right
and Left. Suction
Right. Discharge
Left



B1100

| Size | Price | Horse Power Based on Ordinary Tub. Boiler | Horse Power Based on 30 lbs. Water per H. P. per Hour | Pipe Con- nection, Inches | Capacity per Hour, 1 to 3 feet lift, 60 to 85 lbs. Steam Pressure | |
|------|--------|--|---|---------------------------------|---|--------------------|
| | | | | | Maximum Gallons | Minimum Gallons |
| O | 15.00 | 3 to 6 | 4 to 8 | $\frac{1}{4}$ | 60 | 40 |
| OO | 16.00 | 4 " 8 | 6 " 12 | $\frac{3}{8}$ | 80 | 55 |
| A | 18.00 | 8 " 16 | 10 " 20 | $\frac{1}{2}$ | 135 | 70 |
| AA | 20.00 | 12 " 22 | 15 " 30 | $\frac{1}{2}$ | 180 | 100 |
| B | 25.00 | 17 " 32 | 22 " 45 | $\frac{3}{4}$ | 260 | 140 |
| BB | 30.00 | 20 " 45 | 25 " 60 | $\frac{3}{4}$ | 355 | 170 |
| C | 40.00 | 40 " 65 | 45 " 80 | 1 | 475 | 300 |
| CC | 45.00 | 45 " 80 | 50 " 100 | 1 | 600 | 350 |
| D | 55.00 | 50 " 100 | 60 " 135 | $\frac{1}{4}$ | 800 | 425 |
| DD | 60.00 | 75 " 135 | 85 " 165 | $\frac{1}{4}$ | 1,000 | 525 |
| E | 75.00 | 100 " 180 | 125 " 235 | $\frac{1}{2}$ | 1,400 | 800 |
| EE | 90.00 | 115 " 25 | 150 " 320 | $\frac{1}{2}$ | 1,900 | * 900 |
| F | 110.00 | 160 " 320 | 200 " 400 | 2 | 2,400 | 1,300 |
| FF | 125.00 | 200 " 400 | 250 " 500 | 2 | 3,000 | 1,600 |
| G | 150.00 | 300 " 500 | 325 " 600 | $\frac{1}{2}$ | 3,600 | 2,000 |
| GG | 200.00 | 375 " 600 | 400 " 750 | $\frac{1}{2}$ | 4,200 | 2,500 |

N. B.—Where Injectors are ordered by size connections we always send the size having the larger capacity.

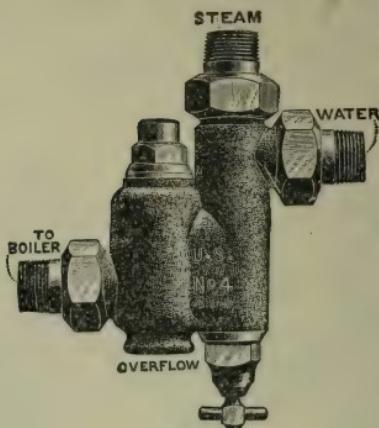
Net Prices,
Parts

| | O or OO | A or A A | B or BB | C or CC | D or D D | E | EE | F | FF |
|--------------------|---------------|----------------|---------------|---------------|----------------|------|------|------|------|
| R—Steam Jet..... | .0.25 | .35 | .45 | .55 | .65 | .75 | .75 | .85 | 1.00 |
| S—Suction Jet..... | .25 | .35 | .45 | .55 | .65 | .75 | .75 | .85 | 1.00 |
| Y—T—Delivery Jet | 1.25 | 1.50 | 2.00 | 2.50 | 3.00 | 3.75 | 4.50 | 5.50 | 6.50 |
| X—Coupling Nut... | .25 | .30 | .40 | .50 | .60 | 1.25 | 1.25 | 1.50 | 1.50 |
| V—Tail Pipe... | .25 | .30 | .40 | .50 | .60 | .80 | .80 | 1.00 | 1.00 |
| Z—Overflow Cap... | .30 | .40 | .50 | .60 | .70 | .80 | .80 | .90 | .90 |
| P— " Valve. | .40 | .50 | .60 | .75 | .90 | 1.00 | 1.10 | 1.25 | 1.25 |
| N— " Hinge. | .10 | .10 | .15 | .15 | .15 | .20 | .20 | .20 | .20 |
| O—Plug | .60 | .80 | 1.00 | 1.25 | 1.50 | 1.75 | 1.75 | 2.00 | 2.00 |
| Strainer | .40 | .45 | .50 | .55 | .60 | .75 | .75 | 1.00 | 1.00 |

State serial number and letter, found on top of the overflow. In referring to or ordering parts, call them by letter or name as in cut.

B1102

U. S. INJECTOR

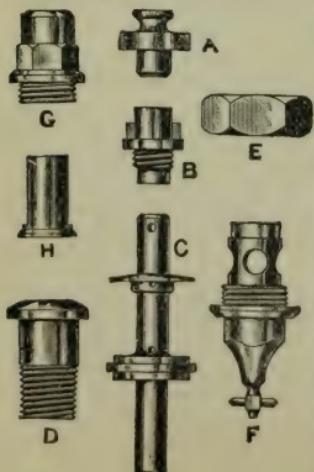


B1103

| Number | Price, Each | Horse-Power | PIPE CONNECTIONS | | | CAPACITY, GALLONS PER HOUR | |
|--------|----------------|-------------|------------------|-------------------|---------------------|-------------------------------|---------|
| | | | Steam, Inches | Supply, Inches | Delivery, Inches | Maximum | Minimum |
| 00 | 13.00 | 1 to 4 | $\frac{1}{4}$ | $\frac{1}{4}$ | $\frac{1}{4}$ | 36 | 15 |
| 0 | 14.00 | 3 " 8 | $\frac{3}{8}$ | $\frac{3}{8}$ | $\frac{3}{8}$ | 65 | 28 |
| 1 | 16.00 | 6 " 10 | $\frac{3}{8}$ | $\frac{3}{8}$ | $\frac{3}{8}$ | 90 | 40 |
| 2 | 18.00 | 8 " 15 | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | 125 | 60 |
| 3 | 20.00 | 15 " 20 | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | 170 | 75 |
| 4 | 25.00 | 20 " 30 | $\frac{3}{4}$ | $\frac{3}{4}$ | $\frac{3}{4}$ | 250 | 125 |
| 5 | 30.00 | 30 " 40 | $\frac{3}{4}$ | $\frac{3}{4}$ | $\frac{3}{4}$ | 340 | 140 |
| 6 | 40.00 | 40 " 60 | 1 | 1 | 1 | 475 | 250 |
| 7 | 45.00 | 60 " 70 | 1 | 1 | 1 | 575 | 300 |
| 8 | 55.00 | 70 " 95 | $1\frac{1}{4}$ | $1\frac{1}{4}$ | $1\frac{1}{4}$ | 750 | 350 |
| 9 | 60.00 | 85 " 120 | $1\frac{1}{4}$ | $1\frac{1}{4}$ | $1\frac{1}{4}$ | 920 | 450 |
| 10 | 75.00 | 120 " 165 | $1\frac{1}{2}$ | $1\frac{1}{2}$ | $1\frac{1}{2}$ | 1350 | 675 |
| 11 | 90.00 | 165 " 230 | $1\frac{1}{2}$ | $1\frac{1}{2}$ | $1\frac{1}{2}$ | 1750 | 850 |
| 12 | 110.00 | 230 " 295 | 2 | 2 | 2 | 2275 | 1000 |
| 14 | 150.00 | 375 " 460 | 2 | 2 | 2 | 3400 | 1700 |

NET PRICES U. S. INJECTOR PARTS

B1104



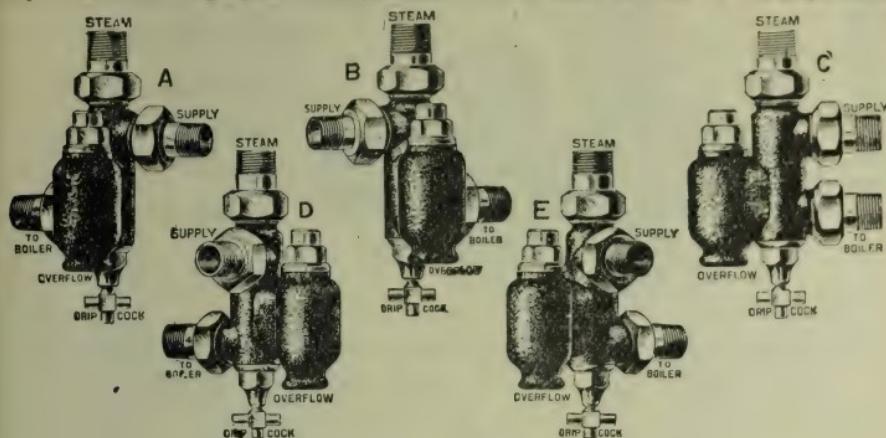
| Size Injector.... | 000 to No. 3 | 4 and 5 | 6 and 7 | 8 and 9 | 10 and 11 | 12,13 and 14 |
|-----------------------|--------------------|---------------|---------------|---------------|-----------------|--------------------|
| D—Tail Pipe | .30 | .35 | .40 | .50 | .75 | 1.00 |
| E—Tail Pipe Nut | .30 | .40 | .50 | .65 | .85 | 1.20 |
| A—Steam Jet..... | .80 | 1.00 | 1.15 | 1.35 | 1.60 | 2.00 |
| B—Suction Jet..... | .50 | .75 | 1.25 | 1.50 | 1.75 | 2.00 |
| C—Delivery Tube | 1.00 | 1.10 | 1.45 | 1.75 | 2.00 | 2.50 |
| F—Delivery Cap.. | 1.00 | 1.10 | 1.45 | 1.75 | 2.00 | 2.50 |
| G—Overflow Cap | .80 | .95 | 1.00 | 1.25 | 1.50 | 2.00 |
| H—Valve..... | | | | | | |

Steam Jet—Subject to little wear and rarely needs renewing.

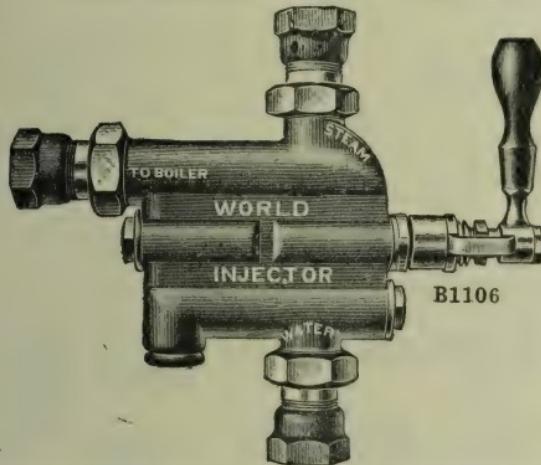
Suction Jet—Subject to considerable wear. (A wrench made of ordinary gas pipe will answer for removing old and inserting new one.)

Delivery Tube—Subject to most wear and most likely to be the first part required.

We furnish the U. S. Traction and Threshing Engine sizes (Nos. 2, 3, 4, and 5) in any of the following styles when specially ordered. Also "A" and "D" in larger sizes.



THE WORLD INJECTORS



| Number | Price Each | Horse-Power | PIPE CONNECTIONS | | | Capacity, 80 Pounds Pressure |
|--------|------------|-------------|------------------|--------------------|---------------------|------------------------------------|
| | | | Steam, Inches | Suction, Inches | Delivery, Inches | |
| 30 | 20.00 | 10 to 15 | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | 120 |
| 40 | 25.00 | 15 " 25 | $\frac{3}{4}$ | $\frac{3}{4}$ | $\frac{3}{4}$ | 220 |
| 50 | 30.00 | 25 " 35 | $\frac{3}{4}$ | $\frac{3}{4}$ | $\frac{3}{4}$ | 300 |
| 60 | 40.00 | 35 " 50 | 1 | 1 | 1 | 420 |
| 70 | 45.00 | 45 " 60 | 1 | 1 | 1 | 540 |
| 80 | 55.00 | 60 " 95 | $1\frac{1}{4}$ | $1\frac{1}{4}$ | $1\frac{1}{4}$ | 720 |
| 90 | 60.00 | 85 " 120 | $1\frac{1}{4}$ | $1\frac{1}{4}$ | $1\frac{1}{4}$ | 900 |
| 100 | 75.00 | 120 " 165 | $1\frac{1}{2}$ | $1\frac{1}{2}$ | $1\frac{1}{2}$ | 1260 |
| 110 | 90.00 | 165 " 230 | $1\frac{1}{2}$ | $1\frac{1}{2}$ | $1\frac{1}{2}$ | 1740 |
| 120 | 110.00 | 230 " 295 | 2 | 2 | 2 | 2230 |
| 130 | 125.00 | 295 " 375 | 2 | 2 | 2 | 2820 |
| 140 | 150.00 | 375 " 460 | 2 | 2 | 2 | 3480 |
| 150 | 175.00 | 465 " 500 | $2\frac{1}{2}$ | $2\frac{1}{2}$ | $2\frac{1}{2}$ | 3600 |
| 160 | 200.00 | 500 " 600 | $2\frac{1}{2}$ | $2\frac{1}{2}$ | $2\frac{1}{2}$ | 4000 |



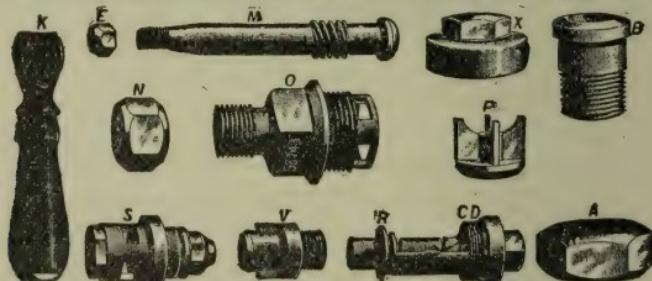
**METROPOLITAN
AUTOMATIC
INJECTORS**

MODEL N

B1109

| Sizes | Prices Model N | Size of all Pipe Con- nections | Size Over- flow or Waste Pipe | Capacity with 80 lbs. Steam Pressure 2-ft. Lift, gals. | Horse-Power | |
|-------|-------------------|--------------------------------------|-------------------------------------|---|---|--|
| | | | | | For the Ordin- ary Type of Boiler and Engine | Basis of 30 lbs. Evaporation per H. P. per hour |
| 2 | 15.00 | $\frac{3}{8}$ | $\frac{3}{4}$ | 60 | 4 to 6 | 5 to 8 |
| 3 | 16.00 | $\frac{3}{8}$ | $\frac{3}{4}$ | 80 | 6 to 8 | 8 to 12 |
| 3½ | 18.00 | $\frac{1}{2}$ | $\frac{3}{4}$ | 120 | 8 to 15 | 12 to 20 |
| 4 | 20.00 | $\frac{1}{2}$ | $\frac{3}{4}$ | 165 | 15 to 20 | 20 to 28 |
| 5 | 25.00 | $\frac{3}{4}$ | 1 | 250 | 20 to 30 | 28 to 40 |
| 6 | 30.00 | $\frac{3}{4}$ | 1 | 350 | 30 to 45 | 40 to 55 |
| 7 | 40.00 | 1 | $1\frac{1}{4}$ | 500 | 45 to 65 | 55 to 80 |
| 8 | 45.00 | 1 | $1\frac{1}{4}$ | 600 | 65 to 80 | 80 to 110 |
| 9 | 55.00 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 800 | 80 to 100 | 110 to 145 |
| 10 | 60.00 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 1000 | 100 to 130 | 145 to 180 |
| 11 | 75.00 | $1\frac{1}{2}$ | 2 | 1300 | 130 to 170 | 180 to 235 |
| 12 | 90.00 | $1\frac{1}{2}$ | 2 | 1750 | 170 to 230 | 235 to 300 |
| 13 | 110.00 | 2 | $2\frac{1}{2}$ | 2300 | 230 to 300 | 300 to 400 |
| 14 | 125.00 | 2 | $2\frac{1}{2}$ | 2850 | 300 to 375 | 400 to 500 |

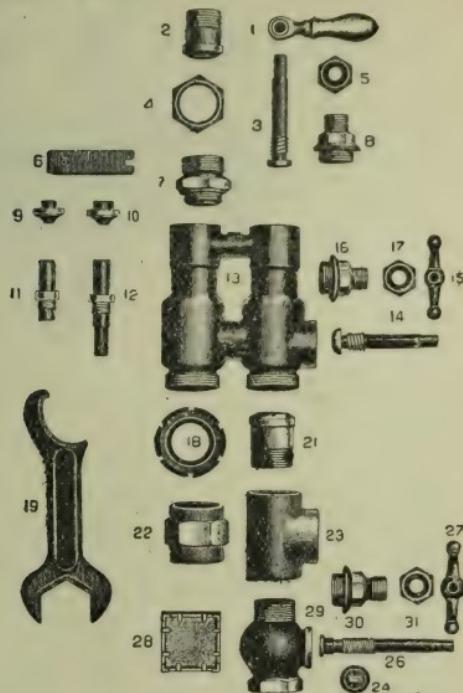
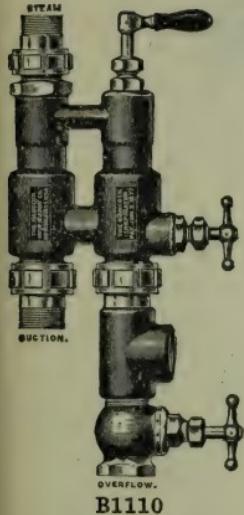
NET PRICE METROPOLITAN INJECTOR PARTS—Model N and S



| Size of Injector, No. | 2-3 | 3½-4 | 5-6 | 7-8 | 9-10 | 11-12 | 13-14 |
|---|------|------|------|------|------|-------|-------|
| S—Steam Jet..... | 1.50 | 1.75 | 2.00 | 2.50 | 3.75 | 5.00 | 7.00 |
| V—Suction Jet..... | .60 | .70 | .90 | 1.25 | 1.85 | 3.00 | 4.00 |
| C-D-R—Combining and Deli- very Tube Auxiliary Check. | 1.75 | 2.10 | 2.75 | 3.50 | 4.50 | 6.50 | 9.00 |
| P—Overflow Valve | .25 | .50 | .75 | 1.00 | 1.25 | 1.75 | 2.50 |
| O—Steam Plug..... | 1.00 | 1.25 | 1.50 | 2.25 | 3.50 | 5.00 | 7.00 |
| M—Steam Valve and Stem. | .40 | .55 | .75 | 1.10 | 1.75 | 2.50 | 4.00 |
| N—Packing Nut..... | .30 | .40 | .50 | .65 | .80 | 1.00 | 1.25 |
| K—Steam Valve Handle.... | .60 | .70 | .80 | 1.00 | 1.20 | 1.40 | 1.60 |
| A—Coupling Nut..... | .60 | .80 | 1.20 | 1.65 | 2.40 | 3.20 | 5.00 |
| B—Tail Pipe..... | .40 | .55 | .80 | 1.20 | 1.70 | 2.40 | 3.40 |
| X—Overflow Cap..... | .50 | .75 | 1.00 | 1.25 | 1.75 | 2.25 | 3.00 |
| E—Nut for Stem M..... | .10 | .10 | .10 | .15 | .15 | .15 | .20 |

HANCOCK INSPIRATORS

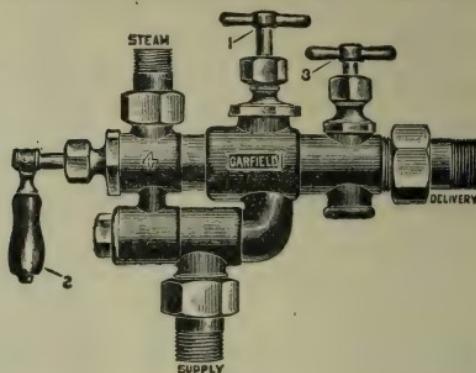
STATIONARY TYPE



Order repairs by number, and be sure to state size number of inspirator.

| Number | Price, Each | HORSE POWER | | PIPE CONNECTIONS, INCHES | | | Capacity, Gals. per Hour, with 60 Pounds Steam Pressure |
|--------|-------------|--|--|--------------------------|----------------------|----------|---|
| | | For the Ordinary Type of Boiler and Engine | On a Basis of 30 Pounds Evaporation per H. P. per Hour | Steam | Suction and Delivery | Overflow | |
| 7½ | 16.00 | 4 to 6 | 5 to 8 | 3/8 | 3/8 | 1/4 | 60 |
| 8¾ | 18.00 | 6 " 8 | 8 " 15 | 3/8 | 1/2 | 3/8 | 90 |
| 10 | 20.00 | 8 " 15 | 15 " 25 | 3/8 | 1/2 | 3/8 | 120 |
| 12½ | 25.00 | 15 " 30 | 25 " 35 | 1/2 | 3/4 | 1/2 | 220 |
| 15 | 30.00 | 30 " 40 | 35 " 60 | 1/2 | 3/4 | 1/2 | 300 |
| 17½ | 40.00 | 40 " 60 | 60 " 75 | 3/4 | 1 | 3/4 | 420 |
| 20 | 45.00 | 60 " 75 | 75 " 100 | 3/4 | 1 | 3/4 | 540 |
| 22½ | 55.00 | 75 " 90 | 100 " 130 | 1 | 1 1/4 | 1 | 720 |
| 25 | 60.00 | 90 " 120 | 130 " 175 | 1 | 1 1/4 | 1 | 900 |
| 30 | 75.00 | 120 " 165 | 175 " 235 | 1 1/4 | 1 1/2 | 1 1/4 | 1260 |
| 35 | 90.00 | 165 " 230 | 235 " 300 | 1 1/4 | 1 1/2 | 1 1/4 | 1740 |
| 40 | 110.00 | 230 " 300 | 300 " 400 | 1 1/2 | 2 | 1 1/2 | 2230 |
| 45 | 125.00 | 300 " 375 | 400 " 500 | 1 1/2 | 2 | 1 1/2 | 2820 |
| 50 | 150.00 | 375 " 500 | 500 " 650 | 2 | 2 1/2 | 2 | 3480 |
| 55 | 175.00 | 500 " 600 | 650 " 700 | 2 | 2 1/2 | 2 | 3650 |

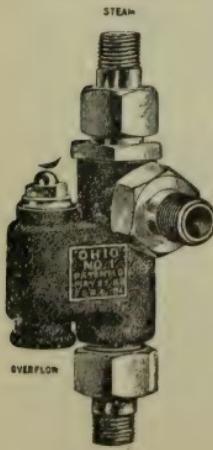
GARFIELD DOUBLE JET INJECTOR



B1112

| Number | Price Each | Horse-Power | PIPE CONNECTIONS | | Capacity. Gallons Per Hour |
|--------|---------------|-------------|------------------|-----------------------------------|----------------------------------|
| | | | Steam, Inches | Supply and Delivery, Inches | |
| 00 | 16.00 | 2 to 5 | $\frac{3}{8}$ | $\frac{3}{8}$ | 60 |
| 0 | 18.00 | 5 " 10 | $\frac{3}{8}$ | $\frac{1}{2}$ | 90 |
| 1 | 20.00 | 10 " 15 | $\frac{3}{8}$ | $\frac{1}{2}$ | 120 |
| 2 | 25.00 | 15 " 24 | $\frac{1}{2}$ | $\frac{3}{4}$ | 220 |
| 3 | 30.00 | 24 " 35 | $\frac{1}{2}$ | $\frac{3}{4}$ | 300 |
| 4 | 40.00 | 35 " 50 | $\frac{3}{4}$ | 1 | 420 |
| 5 | 45.00 | 50 " 65 | $\frac{3}{4}$ | 1 | 540 |
| 6 | 55.00 | 65 " 90 | 1 | $1\frac{1}{4}$ | 720 |
| 7 | 60.00 | 90 " 115 | 1 | $1\frac{1}{4}$ | 900 |
| 8 | 75.00 | 115 " 150 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 1200 |
| 9 | 90.00 | 150 " 200 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 1700 |
| 10 | 110.00 | 200 " 275 | $1\frac{1}{2}$ | 2 | 2200 |
| 11 | 125.00 | 275 " 350 | $1\frac{1}{2}$ | 2 | 2800 |
| 12 | 150.00 | 350 " 425 | 2 | $2\frac{1}{2}$ | 3400 |
| 13 | 180.00 | 425 " 500 | 2 | $2\frac{1}{2}$ | 4000 |
| 14 | 200.00 | 500 " 600 | 2 | $2\frac{1}{2}$ | 4500 |

THE OHIO AUTOMATIC INJECTOR



B1113

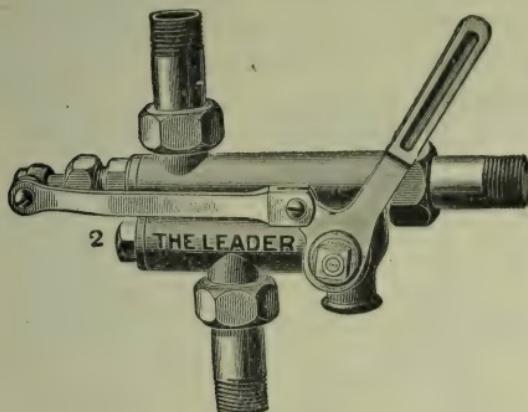
| Size No. | IRON PIPE CONNEC- TIONS | | | CAPACITIES | | Price |
|-------------|----------------------------|-----------------|------------------------|------------------------|----------------|-------|
| | Steam, Inch | Supply, Inch | Deliv- ery, Inch | Gallons Per Hour | Horse Power | |
| 0 | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | 120 | 8 to 10 | 18.00 |
| 1 | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | 165 | 10 " 15 | 20.00 |
| 2 | $\frac{3}{4}$ | $\frac{3}{4}$ | $\frac{3}{4}$ | 250 | 15 " 25 | 25.00 |
| 3 | $\frac{3}{4}$ | $\frac{3}{4}$ | $\frac{3}{4}$ | 340 | 25 " 35 | 30.00 |
| 4 | 1 | 1 | 1 | 460 | 35 " 60 | 40.00 |
| 5 | 1 | 1 | 1 | 580 | 60 " 65 | 45.00 |

These capacities are obtained by actual measurements, on the following basis:

Steam, 60 to 80 lbs.; lift 4 feet, and feed water at 76 degrees Fahr. The actual capacities are in excess of the list and fully equal to any of same size, connections and price.

Reduce capacity by use of valve in supply pipe.

LEADER INJECTOR



B1115

| Number | Size of Pipes, Inches | | Will Feed Boiler Horse-Power | Delivery per Hour 60 Lbs. Steam Gallons | Price Each |
|--------|-----------------------|---------------------|------------------------------------|---|---------------|
| | Steam | Suction and Feed | | | |
| 1 | $\frac{3}{8}$ | $\frac{3}{8}$ | 3 to 7 | 60 | 16.00 |
| 2 | $\frac{3}{8}$ | $\frac{3}{8}$ | 7 " 10 | 90 | 18.00 |
| 3 | $\frac{1}{2}$ | $\frac{1}{2}$ | 12 " 18 | 150 | 22.00 |
| 4 | $\frac{1}{2}$ | $\frac{1}{2}$ | 18 " 25 | 220 | 25.00 |
| 5 | $\frac{3}{4}$ | $\frac{3}{4}$ | 25 " 35 | 300 | 30.00 |
| 6 | $\frac{3}{4}$ | $\frac{3}{4}$ | 35 " 40 | 400 | 35.00 |
| 7 | $\frac{3}{4}$ | 1 | 45 " 60 | 500 | 40.00 |
| 8 | $\frac{3}{4}$ | 1 | 60 " 70 | 600 | 45.00 |
| 9 | 1 | $1\frac{1}{4}$ | 70 " 90 | 750 | 55.00 |
| 10 | 1 | $1\frac{1}{4}$ | 100 " 125 | 1000 | 65.00 |
| 11 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 125 " 125 | 1300 | 75.00 |
| 12 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 150 " 200 | 1800 | 90.00 |

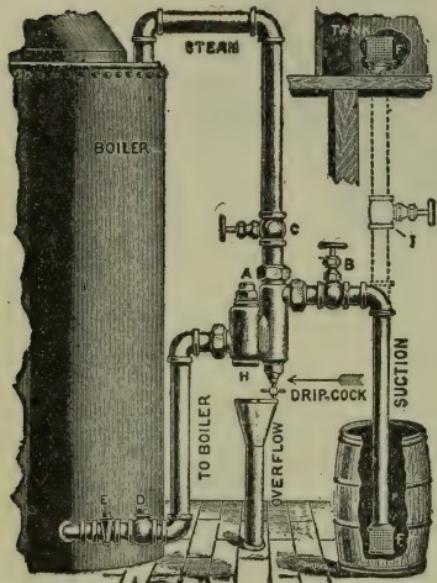
| CHICAGO AUTOMATIC | Size | Pipe Connec- tions. Inches | Max.Capa- city per Hour, Gallons | H. P. Based on Ordinary Tubular Boiler | Price Each |
|-------------------|------|-------------------------------------|---|---|---------------|
| | | | | | |
| | 00 | $\frac{3}{8}$ | 80 | 4 to 11 | 16.00 |
| | 0 | $\frac{1}{2}$ | 135 | 10 " 19 | 18.00 |
| | 1 | $\frac{1}{2}$ | 180 | 15 " 24 | 20.00 |
| | 2 | $\frac{3}{4}$ | 260 | 18 " 34 | 25.00 |
| | 3 | $\frac{3}{4}$ | 355 | 20 " 47 | 30.00 |
| | 4 | 1 | 475 | 40 " 64 | 40.00 |
| | 5 | 1 | 600 | 45 " 80 | 45.00 |
| | 6 | $1\frac{1}{4}$ | 800 | 55 " 106 | 55.00 |
| | 7 | $1\frac{1}{4}$ | 1000 | 75 " 134 | 60.00 |
| | 8 | $1\frac{1}{2}$ | 1400 | 100 " 181 | 75.00 |
| | 9 | $1\frac{1}{2}$ | 1900 | 115 " 254 | 90.00 |
| | 10 | 2 | 2400 | 150 " 320 | 110.00 |
| | 11 | 2 | 3000 | 190 " 400 | 125.00 |
| | 12 | $2\frac{1}{4}$ | 3600 | 275 " 480 | 150.00 |
| | 13 | $2\frac{1}{2}$ | 4200 | 375 " 560 | 180.00 |
| | 14 | $2\frac{1}{2}$ | 4500 | 400 " 600 | 200.00 |



B1116

INJECTORS

SUGGESTIONS FOR CONNECTING AUTOMATIC INJECTORS

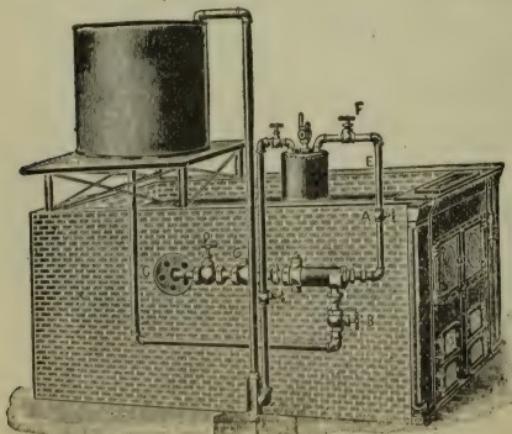


Hint.—If steam pipe is already in and happens to be one size smaller than injector connection, it will answer, provided it is short and direct.

Steam.—Always take steam from the highest point of boiler possible, and never connect to steam pipe used for other purposes.

Blow-Out.—Always blow out steam pipe thoroughly before connecting injector, so as to remove any dirt, rust, or scale that may be in the pipes.

Caution.—The suction pipe must be absolutely tight throughout. To make sure that it is, test the suction.



ATTACHED TO WORK UNDER PRESSURE

Showing method of attaching injector when taking water under pressure from tank overhead, and also for filling tank with ejector.

To Start the Automatic Injector

Open valve in steam pipe full, then valve in supply pipe only sufficient to give water for the steam to control. Should the injector not have enough or too much water, it will show at the overflow, and must be regulated accordingly.

Connect as shown in cut to steam, suction, and delivery. The steam valve "C" should be a globe valve, and may be at any convenient place in the steam pipe.

Always place a globe valve, "B," in the suction pipe, as close to the injector as possible, and place it so that it will shut down against the water side.

When using the injector as non-lifting, put two globe valves in the suction, one close to the injector, the other as far from it as you can conveniently, keeping the one farthest from the injector tolerably close throttled. This will surely repay you for your trouble.

Check valve "D" may be at any point between injector and boiler, the farther from injector the better. If the injector forces through a heater, place check valve between injector and heater.

Size of Pipe.—If an injector has over ten feet lift, or a long draw, use suction pipe from strainer "F" to valve "B" a size larger than the connection on injector, reducing when you reach the valve.

In all other cases, use for all pipes same size as injector connection.



BLAKESLEE JET PUMPS

B1120

| Size of Pump | inches | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|-------------------------|--------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|
| Price | each | 8.00 | 10.00 | 12.00 | 14.00 | 16.00 | 20.00 | 24.00 |
| Suction Pipe..... | inches | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
| Discharge Pipe..... | " | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ |
| Steam Pipe..... | " | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | $\frac{3}{4}$ | 1 | 1 |
| Gallons per Minute..... | " | 8 | 15 | 20 | 30 | 40 | 50 | 60 |

PARTS OF BLAKESLEE JET PUMPS

| Size..... | inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|---------------------------------|--------|---------------|---------------|-----|----------------|----------------|------|----------------|------|
| Nuts..... | each | .50 | .50 | .50 | .75 | .75 | 1.00 | 1.50 | 1.50 |
| Malleable Nipples..... | " | .25 | .25 | .25 | .35 | .35 | .60 | .75 | 1.00 |
| Comb. Pipes (loose tubes) | " | .75 | .75 | .75 | 1.00 | 1.00 | 1.50 | 1.50 | |
| Steam Tubes (tight tubes) | " | .25 | .50 | .50 | .60 | .60 | .75 | .75 | |



AMERICAN JET PUMP

B1121

| No. | Size Suction, Inches | Size Delivery, Inches | Steam Connection, Inches | Gallons per Hour | Price |
|-----|----------------------|-----------------------|--------------------------|------------------|-------|
| 000 | $\frac{3}{8}$ | $\frac{3}{8}$ | $\frac{1}{4}$ | 150 | 4.00 |
| 00 | $\frac{1}{2}$ | $\frac{3}{8}$ | $\frac{1}{4}$ | 250 | 5.00 |
| 0 | $\frac{3}{4}$ | $\frac{1}{2}$ | $\frac{3}{8}$ | 375 | 6.00 |
| 1 | 1 | $\frac{3}{4}$ | $\frac{1}{2}$ | 500 | 7.50 |
| 2 | $1\frac{1}{4}$ | 1 | $\frac{3}{4}$ | 1000 | 10.00 |
| 3 | $1\frac{1}{2}$ | $1\frac{1}{4}$ | 1 | 1500 | 12.50 |
| 4 | 2 | $1\frac{1}{2}$ | $1\frac{1}{4}$ | 2000 | 15.00 |
| 5 | $2\frac{1}{2}$ | 2 | $1\frac{1}{2}$ | 2800 | 17.50 |
| 6 | 3 | $2\frac{1}{2}$ | 2 | 3800 | 25.00 |
| 7 | 4 | 3 | 2 | 6500 | 35.00 |
| 8 | 5 | 4 | $2\frac{1}{2}$ | 10000 | 55.00 |

These Jet Pumps are for filling tanks for Farm or Road Engines; also for Drainage Pumps for Steamboats, Barges, Mines, etc.

BRASS STRAINERS

For

INJECTORS AND EJECTORS



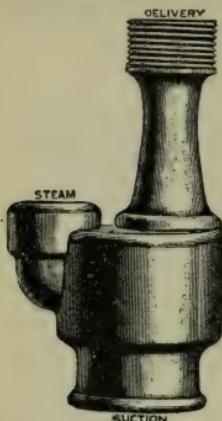
| Size .. | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|---------|---------------|---------------|-----|----------------|----------------|------|----------------|------|
| Each. | .40 | .50 | .60 | .75 | 1.00 | 1.50 | 2.00 | 2.50 |

B1122—PIPE



B1123—HOSE

DRIVE WELL JET PUMP



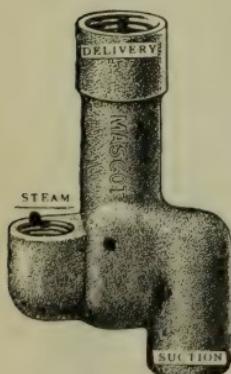
DRIVE WELL JET PUMP

B1124

Connect in any position to suit convenience of piping, but have the Jet Pump not to exceed 10 to 15 feet above the water level.

This style of Jet Pump is especially intended for use in driven, drilled or bored wells, where it might be impossible to use the ordinary Jet Pump.

| No. | Suction, Inches | Delivery, Inches | Steam, Inches | Size Pipe will go in. Inches | Gallons, per Hour | Price |
|-----|--------------------|---------------------|------------------|---------------------------------------|----------------------|-------|
| 1 | 1 | $\frac{3}{4}$ | $\frac{1}{2}$ | 3 | 500 | 7.50 |
| 2 | $1\frac{1}{4}$ | 1 | $\frac{3}{4}$ | $3\frac{1}{2}$ | 1000 | 10.00 |
| 3 | $1\frac{1}{2}$ | $1\frac{1}{4}$ | 1 | 4 | 1500 | 12.50 |
| 4 | 2 | $1\frac{1}{2}$ | $1\frac{1}{4}$ | 5 | 2000 | 15.00 |
| 5 | 3 | 2 | $1\frac{1}{4}$ | ... | 3800 | 25.00 |



MASCOT EJECTOR

Made in one Size only

Price, \$3.00.

Steam Connection, $\frac{3}{8}$ -inch; Suction and Delivery,
 $\frac{1}{2}$ -inch

Extreme Width of Body, $2\frac{3}{4}$ inches

Capacity, 300 Gallons per hour

B1125

This Ejector is specially designed to meet the requirements of oil and gas well drillers; the body being made on a curve allows it to drop between inner and outer casings of a drive well.

It will Elevate Water 60 Feet on 75 Pounds Steam



"XL-96" EJECTOR OR JET PUMPS

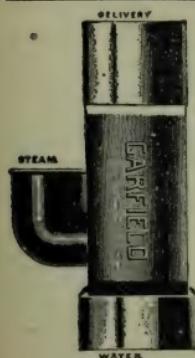
B1126

Lifts 22 to 25 Feet. Elevates 50 to 75 Feet

| Number | Price, Brass, Each | Price, Iron Body, Each | Steam Connec- tion, Inches | Suction and Dis- charge, Inches | CAPACITY, GALLONS PER HOUR | | | VERTICAL LIFT FEET | | |
|------------------------|--------------------------|---------------------------------|-------------------------------------|---|----------------------------|-----------------------------|------------------------------|-----------------------|----|--------|
| | | | | | 3 Foot Lift | | 50 Foot Eleva- tion | | | |
| | | | | | 40 to 65 | 20 to 40 or 65 to 100 | 40 to 65 | | | |
| STEAM PRESSURE, POUNDS | | | | | | | | | | |
| 1 | 8.00 | ..... | 3/8 | 1/2 | 240 | 235 | 120 | 180 | 23 | 20 |
| 2 | 10.00 | ..... | 1/2 | 3/4 | 500 | 450 | 250 | 375 | 25 | 22 |
| 3 | 15.00 | ..... | 3/4 | 1 | 840 | 700 | 420 | 625 | 25 | 22 |
| 4 | 20.00 | ..... | 1 | 1 1/4 | 1350 | 1300 | 650 | 950 | 24 | 21 1/2 |
| 5 | 25.00 | 20.00 | 1 | 1 1/2 | 1950 | 1850 | 975 | 1450 | 26 | 21 1/2 |
| 6 | 35.00 | 27.50 | 1 1/4 | 2 | 3500 | 3000 | 1750 | 2600 | 26 | 21 1/2 |
| 7 | 50.00 | 40.00 | 1 1/2 | 2 1/2 | 5700 | 4350 | 2500 | 3750 | 26 | 22 |
| 8 | 70.00 | 50.00 | 2 | 3 | 9500 | 8160 | 4750 | 7200 | 25 | 20 |
| 9 | 105.00 | 70.00 | 2 | 3 1/2 | 13600 | 12400 | 6800 | 10200 | 25 | 21 |
| 10 | 145.00 | 95.00 | 2 1/2 | 4 | 18400 | 17100 | 9200 | 13800 | 25 | 21 |

TABLE SHOWING SIZE OF BOILERS REQUIRED FOR JET PUMPS

| | | | | |
|-------------------------------|---------|---------|----------|----------|
| Number of Ejector..... | 1, 2, 3 | 4, 5, 6 | 7, 8 | 9, 10 |
| Size Boiler, Horse-Power..... | 2 to 6 | 8 to 12 | 15 to 20 | 25 to 30 |



B1127

The Garfield Ejector is so constructed that all connections are made from straight pipes screwed directly into the Ejector, and is specially designed for driven and drilled wells.

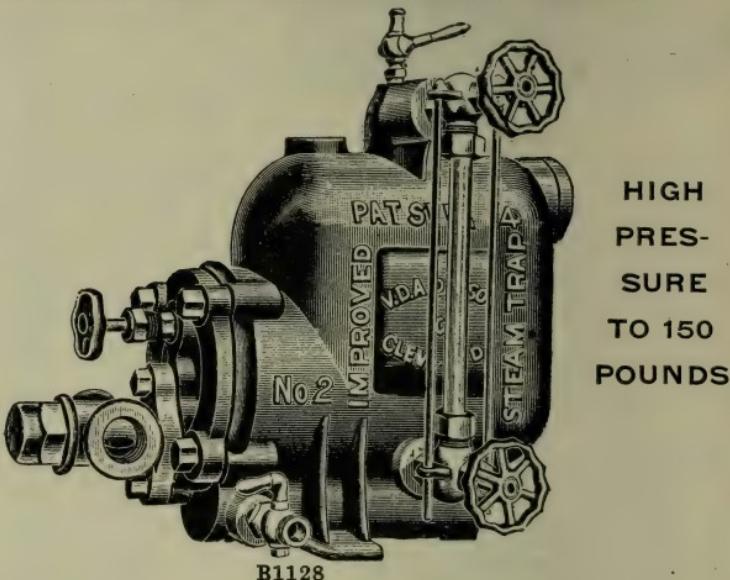
For raising water from deep wells, mines or pits, filling or emptying tanks, raising and transferring liquids, hot or cold, in tanneries, dye houses, etc., it is not surpassed.

To CONNECT.—Attach as shown in cut in upright position. Ejector being suspended by the delivery and steam pipes. The suction pipe must be tight, and if lift of more than 10 feet, a size larger than listed should be used.

| Num- ber | Price Each | PIPE CONNECTIONS, INCHES | | | Diam- eter of Well, Inches | Capacity per Hour, Gallons |
|-------------|---------------|-----------------------------|---------|---------------|-------------------------------------|----------------------------------|
| | | Steam | Suction | Deliv- ery | | |
| 1 | 8.00 | 3/8 | 3/4 | 1/2 | 2 1/4 | 300 |
| 2 | 10.00 | 3/8 | 1 | 3/4 | 2 3/4 | 500 |
| 3 | 15.00 | 1/2 | 1 1/4 | 1 | 3 | 800 |
| 4 | 20.00 | 3/4 | 1 1/2 | 1 1/4 | 3 1/2 | 1300 |
| 5 | 25.00 | 1 | 2 | 1 1/2 | 4 1/2 | 2000 |
| 6 | 35.00 | 1 1/4 | 2 1/2 | 2 | 5 | 3000 |
| 7 | 50.00 | 1 1/2 | 3 | 2 1/2 | 6 | 5000 |
| 8 | 60.00 | 1 1/2 | 3 | 2 1/2 | 6 | 6500 |

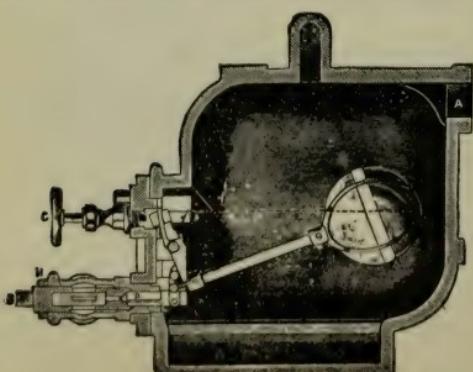
ANDERSON IMPROVED STEAM TRAPS

ATMOS-
PHERIC
PRES-
SURE
LOW
PRES-
SURE



Three different classes as stated above; indicate which is wanted or state steam pressure

| Size Number of Trap..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|-------|-------|-------|-------|--------|--------|--------|
| Price | 20.50 | 22.50 | 28.00 | 35.00 | 50.00 | 70.00 | 120.00 |
| Size of Pipe connection, in inches..... | ½ | ¾ | 1 | 1¼ | 1½ | 2 | 2½ |
| Maximum discharge of condensation, per hour in pounds..... | 750 | 1,200 | 2,000 | 2,800 | 4,000 | 6,000 | 12,000 |
| Greatest number of square feet of surface that should be applied..... | 500 | 800 | 1,300 | 2,350 | 3,500 | 5,000 | 10,000 |
| Greatest number of lineal feet of 1-inch pipe surface that should be applied.... | 1,500 | 2,500 | 4,000 | 7,000 | 10,000 | 15,000 | 30,000 |
| Shipping Weight, in pounds (boxed)..... | 54 | 67 | 93 | 112 | 145 | 190 | 440 |



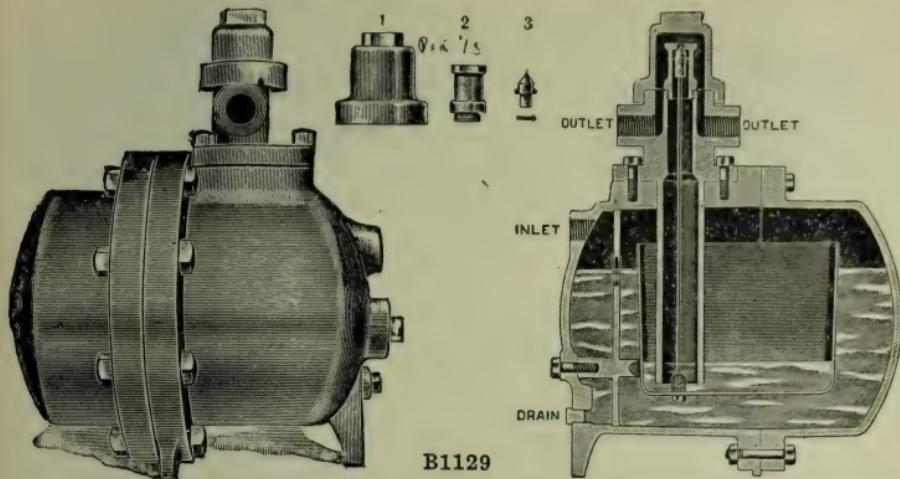
Sectional View

Note— Standard Trap will work at any pressure, from 150 pounds down, but for low pressure service we can furnish the trap with extra large valve outlet; hence in ordering, indicate approximate pressure under which trap is to be operated.

Every Trap is carefully tested under pressure before leaving factory.

Glass water gauge shows at a glance whether trap is working properly or not. These traps work against any back pressure less than the pressure at the trap. Made for High or Low Pressure, or Exhaust Steam.

THE SQUIRES STEAM TRAP



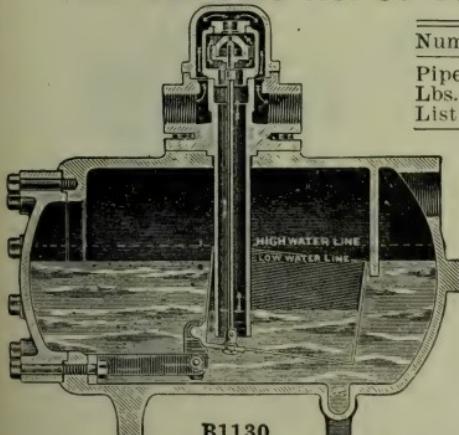
B1129

Gravity Trap for 10 Pounds or less. **Low Pressure Trap for 10 to 30 Pounds.**
Standard Pressure Trap for 30 to 125 Pounds. **High Pressure**
Traps for 125 Pounds and up

State highest pressure under which trap is to be operated.

| Number..... | 0 | 1 | 2 | 3 | 4 | 5 |
|--------------------------------------|-------|-------|-------|-------|-------|-------|
| Price.....each | 20.00 | 22.00 | 28.00 | 35.00 | 50.00 | 70.00 |
| Size Pipe Connection .....inches | 1/2 | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 |
| Capacity, Lineal feet 1-inch Pipe... | 3000 | 4000 | 6000 | 10000 | 15000 | 25000 |
| " Square " Radiation.... | 900 | 1300 | 2000 | 3300 | 5000 | 8300 |
| " Pounds of Water per hour | 300 | 500 | 725 | 1200 | 2000 | 3000 |

THE SQUIRES NO. 50 UNLIMITED STEAM TRAP

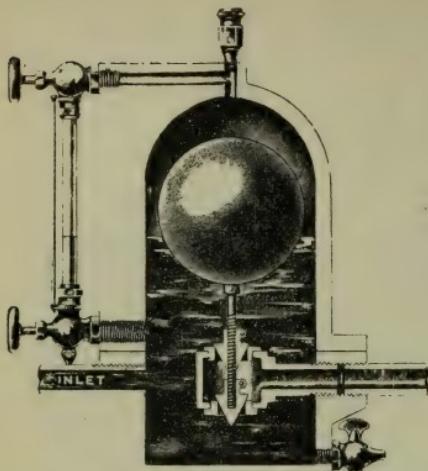


B1130

| Number | 30 | 40 | 50 |
|---------------------|-----------|-------|-----------|
| Pipe Connection ... | 1 1/2 in. | 2 in. | 2 1/2 in. |
| Lbs. Water per hour | 5000 | 10000 | 20000 |
| List Price | 70.00 | 90.00 | 120.00 |

This Trap works equally well at any pressure from 0 to 300 pounds steam.

It is adapted to take care of large bodies of condensation in cooking kettles, etc., where there is a low steam pressure and a large amount of condensation in starting and a high pressure when apparatus is heated, and main headers of large power plants or any condition where there is an excessive amount of condensation.



**THE DURAM SPECIAL
STEAM TRAP**

B1131

Designed Especially for Central
Station Heating

| Size Inlet and Outlet..... | ¾ in. | 1 in. | 1¼ in. | 1½ in. | 2 in. |
|----------------------------------|-------|-------|--------|--------|-------|
| Pounds Discharged per Hour | 2500 | 4000 | 6000 | 8000 | 16000 |
| Square Feet Radiation..... | 1500 | 2500 | 4000 | 6000 | 12000 |
| List, Price Complete..... | 25.00 | 28.00 | 35.00 | 45.00 | 60.00 |

Low Pressure from 0 to 15 lbs. Standard Pressure from 15 to 100 lbs. High pressure from 100 to 150 lbs.

NASON PATTERN



B1132

SIDELUG TRAP

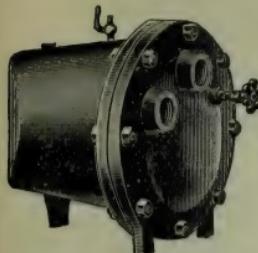


B1133

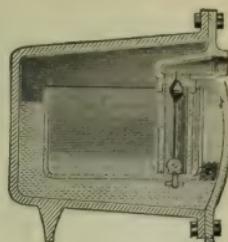
| Number | 1 | 2 | 3 | 4 | 5 |
|--|-------|-------|-------|-------|-------|
| Nason Pattern Trap..... each | 16.00 | 20.00 | 27.50 | 42.50 | 70.00 |
| Sidelug Trap..... " | 16.85 | 21.30 | 29.25 | 45.50 | 74.75 |
| Capacity, Lineal Feet of 1-inch Pipe | 1050 | 2700 | 4200 | 6000 | 10500 |
| " Square Feet of Radiation..... | 350 | 900 | 1400 | 2000 | 3500 |
| Maximum Discharge per Minute..... pounds | 2 | 5 | 8 | 12 | 20 |
| Inlet and Outlet..... inches | ½ | ¾ | 1 | 1¼ | 1½ |

Nason Traps are for pressures up to 70 pounds; Sidelug Traps, up to 150 pounds.

STANDARD



SECTIONAL



KIELEY STEAM TRAPS

Low Pressure

High Pressure

*Extra High Pressure

B1135

| Number | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|-------|-------|-------|-------|-------|--------|--------|
| Price.....each | 25.00 | 35.00 | 45.00 | 60.00 | 80.00 | 100.00 | 125.00 |
| Capacity, Lineal Feet of 1-inch Pipe..... | 4000 | 6000 | 10000 | 15000 | 25000 | 35000 | 50000 |
| " Square Feet of Radiation | 1300 | 2000 | 3300 | 5000 | 8300 | 11500 | 16500 |
| " Pounds of Water... per hour | 500 | 725 | 1200 | 2000 | 3000 | 4000 | 6000 |
| Inlet and Outlet.....inches | ¾ | 1 | 1¼ | 1½ | 2 | 2½ | 3 |

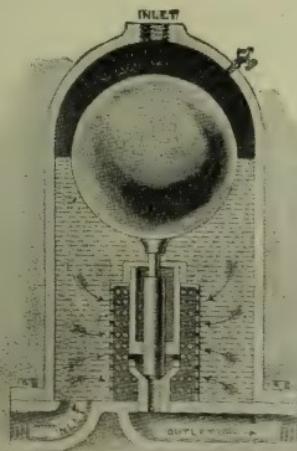
* Extra High Pressure Traps are made in No. 2, 3, 4, 5, and 6 sizes, and intended for pressures of from 125 to 250 pounds per square inch. List price and connections same as above. Capacity, pounds water per hour: No. 2, 3,100; No. 3, 4,700; No. 4, 6,300; No. 5, 8,000; No. 6, 9,500.

The Low Pressure Traps are intended for 1 to 30 pounds pressure.

The High Pressure Traps are intended for 30 to 125 pounds pressure.

The greatest possible capacity is obtained from these traps when they are working on a pressure the same as or approximately close to the pressure stamped on brass plate which is affixed to each of our traps. They should never be applied to pressures higher than that stamped on this plate. They will work satisfactorily on lower pressures down to one pound, but with a proportionately decreased capacity.

NEW LOW PRESSURE GREASE TRAP

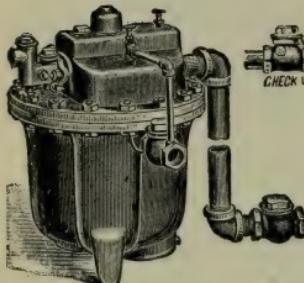


B1137

Price list same as Kieley Traps top of page.

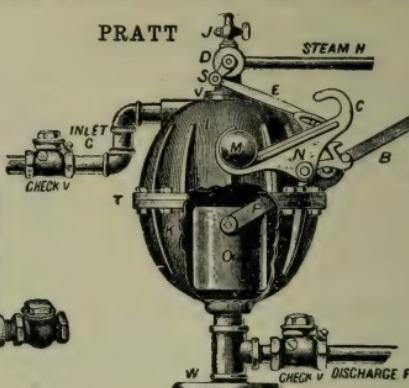
RETURN STEAM TRAPS

ALBANY



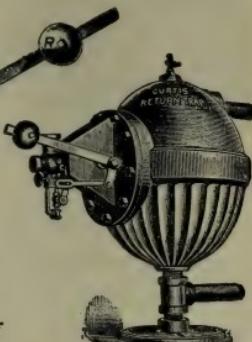
B1138

PRATT



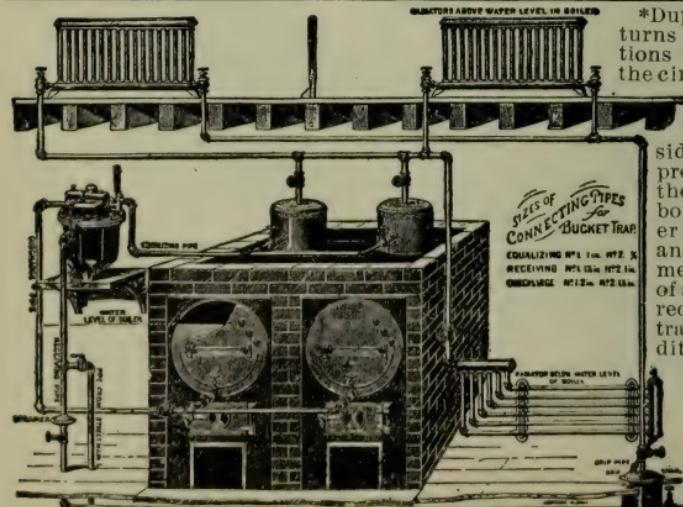
B1139

CURTIS



B1140

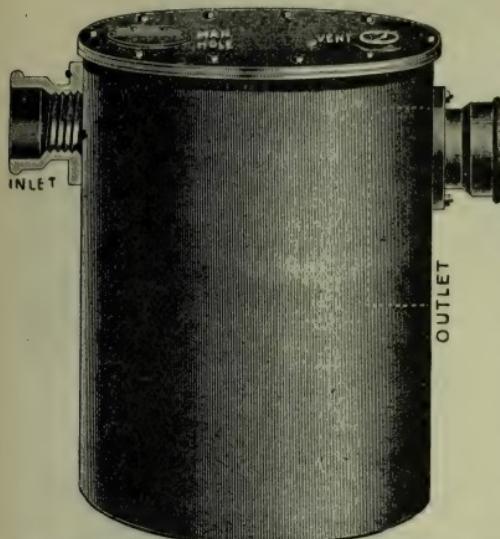
| | Number | 0 | 2 | 1 | 1A |
|---|-----------------------|---------|---------|---------|--------|
| Albany Trap | Price each | 50.00 | 100.00 | 150.00 | 200.00 |
| Capacity Lin. ft. 1 inch pipe (maximum).... | 1000 | 8000 | 12000 | 30000 | |
| " Gal. Water per minute (maximum) | 1 | 6 | 8 | 15 | |
| Inlet and Outlet..... inches | ½ x 1 | 1 x 1½ | 1½ x 2 | 1½ x 2½ | |
| | Number | 1 | 2 | 3 | 4 |
| Pratt Trap | Price each | 100.00 | 150.00 | 200.00 | 300.00 |
| Capacity Lin. ft. 1 inch pipe (maximum).... | 5000 | 10000 | 20000 | 40000 | |
| " Gal. Water per hour " | 200 | 350 | 550 | 800 | |
| Inlet and Outlet .. inches | 1 x 1½ | 1¼ x 2 | 1½ x 2¼ | 2 x 2½ | |
| | Number | 1 | 2 | 3 | 4 |
| Curtis Trap | Return Trap..... each | 100.00 | 150.00 | 200.00 | 300.00 |
| *Duplex " | 125.00 | 175.00 | 250.00 | 350.00 | |
| Capacity Lin. ft. 1 inch pipe..... | 5000 | 10000 | 20000 | 40000 | |
| Inlet and Outlet .. inches | 1 x 1¼ | 1¼ x 1½ | 1½ x 2 | 2 x 2½ | |
| Receivers, (Inlets tapped 1 inch)..... extra | | 12.00 | 15.00 | 20.00 | 35.00 |



Illustrates Return Trap Installed

*Duplex Trap (Curtis) returns water from circulations without pressure in the circulation, the trap being below all returns, pressure is no objection. If considerably below boiler pressure trap will put the water back into the boiler, even if the boiler is located in the attic and the trap in the basement. A boiler pressure of about eight pounds is required to operate the trap under ordinary conditions where trap is 6 or 8 feet below top of boiler.

With the Duplex Trap the location of trap and receiver is reversed.



CAST IRON BLOW-OFF AND GRAVEL BASINS

B1145

Standard Blow-off Basins are fitted with one 4-inch Combination Screws and Soil pipe inlet, 4-inch Outlet with Seal, one 2-inch vapor vent and man-hole in cover. We will fit basins to your specifications with 4-in., 6-in. or 8-in. Hubs or Flanges--openings less than 4-in. will be fitted with Flanges. Fittings other than Standard will be charged extra. Flusher attached to Basin when ordered.

| Diameters.....inches | 24 | 26 | 30 | 36 | 42 | 48 |
|------------------------|-------|-------|-------|-------|--------|--------|
| Height, 30 inches..... | 39.00 | ..... | 48.00 | ..... | ..... | ..... |
| " 32 " | 44.00 | ..... | ..... | ..... | ..... | ..... |
| " 36 " | 43.00 | ..... | 52.00 | 63.00 | ..... | ..... |
| " 38 " | 48.00 | ..... | ..... | ..... | ..... | ..... |
| " 42 " | 47.00 | ..... | 58.00 | 70.00 | 84.00 | ..... |
| " 44 " | 52.00 | ..... | ..... | ..... | ..... | ..... |
| " 48 " | 51.00 | ..... | 62.00 | 77.00 | 91.00 | 102.00 |
| " 50 " | 60.00 | ..... | ..... | ..... | ..... | ..... |
| " 54 " | 55.00 | ..... | 67.00 | 84.00 | 98.00 | 110.00 |
| " 56 " | 70.00 | ..... | ..... | ..... | ..... | ..... |
| " 60 " | 60.00 | ..... | 72.00 | 91.00 | 105.00 | 119.00 |
| " 66 " | ..... | ..... | ..... | ..... | ..... | 128.00 |
| " 72 " | ..... | ..... | ..... | ..... | ..... | 138.00 |

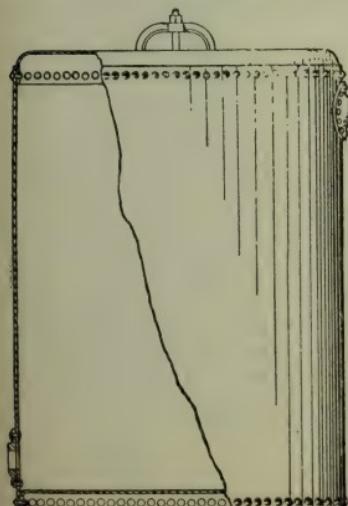
LEADER BLOW-OFF RECEIVERS

| PRICE LIST | | | | |
|--------------------|------------------|--------------------|---------------------|-------|
| Diameter Inches | Length Inches | Thickness Steel | Capacity Gallons | Price |
| 20 | 24 | $\frac{1}{4}$ | 34 | 48.00 |
| 24 | 24 | $\frac{1}{4}$ | 47 | 55.00 |
| 30 | 24 | $\frac{1}{4}$ | 73 | 62.00 |
| 30 | 30 | $\frac{1}{4}$ | 90 | 64.00 |
| 36 | 30 | $\frac{1}{4}$ | 130 | 73.00 |
| 36 | 36 | $\frac{1}{4}$ | 160 | 75.00 |
| 36 | 48 | $\frac{1}{4}$ | 210 | 80.00 |

Price includes Manhole and two Marine Flanges.

If Handhole is furnished instead of Manhole, deduct \$2.50, net.

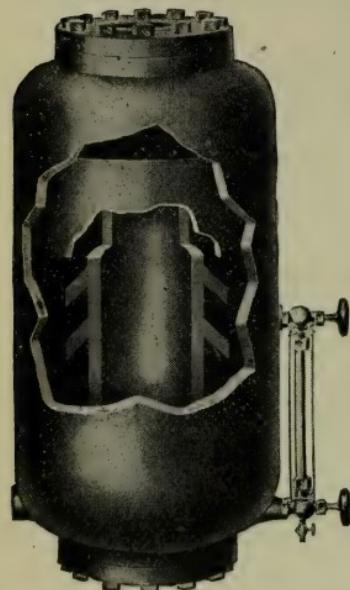
In ordering, give size and location of openings wanted.



B1146

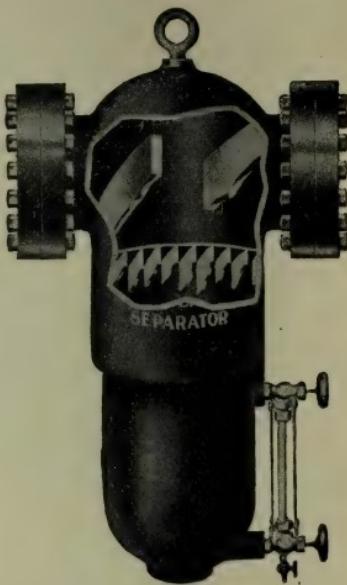
GREENAWAY SEPARATORS

TYPE A



B1147

TYPE C



B1148

Also made Angle Pattern at special price.

Vertical and Horizontal, for Working Pressure of 200 Pounds

| Sizes..... | inches | 1½ | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 | 10 | 12 |
|-----------------------------|--------|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| Price..... | each | 35. | 45. | 50. | 55. | 65. | 70. | 75. | 85. | 105. | 125. | 160. | 220. | 250. |
| Face to Face Vertical...in. | 15½ | 16 | 16 | 18 | 19 | 20 | 21½ | 22½ | 25 | 28 | 31 | 36½ | 39 | |
| Horizontal..... | " | 7 | 8 | 9¾ | 10½ | 12¼ | 12½ | 14½ | 14½ | 16¾ | 18¾ | 20½ | 24 | 30 |
| Diam. of Vertical.... | " | 7 | 7½ | 8 | 8¾ | 11¼ | 11¾ | 13¼ | 14 | 16 | 18 | 19½ | 25 | 30 |
| Height of Horizontal | " | 11 | 14 | 18½ | 21¼ | 22½ | 23½ | 26¾ | 28 | 32 | 34 | 39 | 43 | 50 |
| Center to Bottom of " | " | 8½ | 11 | 15 | 15½ | 16 | 17 | 18½ | 19¾ | 21½ | 24½ | 28 | 31 | 35 |

Price includes Companion Flanges, Bolts, Water Gauge and Drip Valve.

For Heavy Duty Separators, Steel Shell Separators, "Special" Oil Separators, Compressed Air Separators, and Ammonia Separators, see bottom next page.

GREENAWAY OIL SEPARATORS

Exhaust Service. For Non-Condensing Engines

Same patterns, dimensions and list prices as above.

B1149—Vertical, known as Type L. B1150—Horizontal, known as Type M

The Vertical Oil Separator is constructed for descending steam currents.

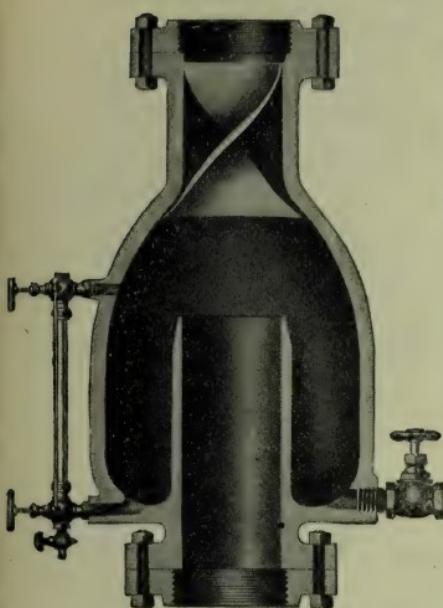
See bottom of next page for Greenaway Separators for Special Purposes.

GREENAWAY SPECIAL OIL SEPARATOR

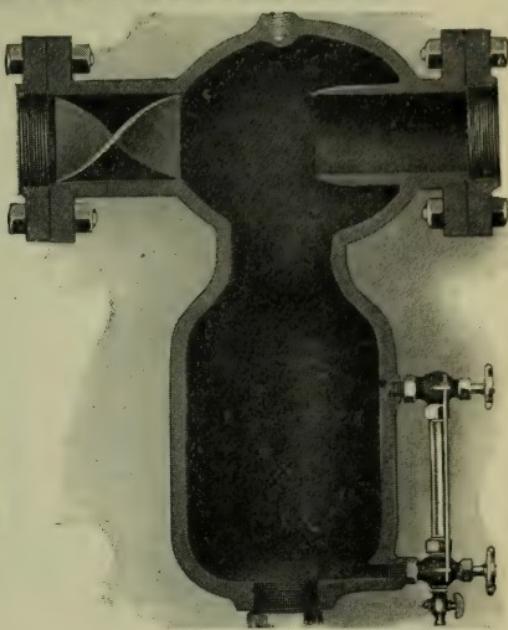
Horizontal. Type N, with Wet Plates. Type O, with Dry Plates

Separates every particle of oil from the steam; has special facilities for cleaning without breaking pipe connections.

Prices and dimensions quoted on application.

"SWARTWOUT" STEAM SEPARATORS

B1154—VERTICAL



B1155—HORIZONTAL

| Inches..... | 1½ | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 | 10 | 12 |
|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|--------|--------|--------|--------|--------|
| Each..... | 25. | 35. | 45. | 50. | 60. | 70. | 80. | 95. | 120.00 | 140.00 | 175.00 | 250.00 | 300.00 |
| Face to Face..... | 25 | 35 | 45 | 50 | 60 | 70 | 80 | 95 | 120.00 | 140.00 | 175.00 | 250.00 | 300.00 |
| Vertical...inches | 13 | 14½ | 16¾ | 19 | 21 | 22½ | 25% | 27% | 29¼ | 34½ | 37 | 44½ | 49½ |
| Horizontal " " | 12½ | 13½ | 14¾ | 16¾ | 18 | 20 | 22 | 23½ | 27 | 30½ | 34 | 37½ | 38¾ |

1-inch, also 9-inch sizes quoted on application.

Price includes flanges, bolts, water gauge, drip valve and nipple.

Horizontal 6-inch and larger are cast in two sections—the drip pot being flanged and attached with bolts and gasket at neck.

(Continued from preceding page.)

GREENAWAY HEAVY DUTY SEPARATORS

For Working Pressure of 250 Pounds

Type B, same Style as Type A—Vertical

Type D, same Style as Type C—Horizontal

Type B and D are of similar design to Type A and C, but are of heavier construction, and dimensions are slightly different.

| Size.....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 | 10 |
|-----------------|-----|-----|-----|-----|-----|--------|--------|--------|--------|--------|--------|
| Price .....each | 55. | 65. | 70. | 75. | 85. | 105.00 | 125.00 | 160.00 | 185.00 | 220.00 | 250.00 |

Including companion flanges, bolts, water gauge and drip valve.

Also made Angle Pattern at special price.

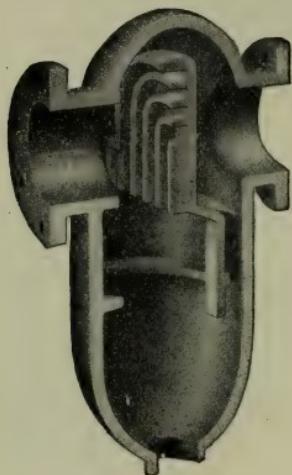
GREENAWAY STEEL SEPARATORS

Constructed of Boiler Sheets, Riveted

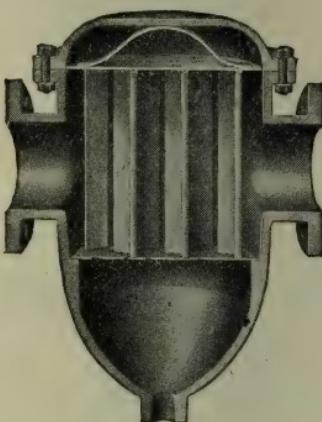
10-inch to 24-inch Sizes, for 250 Pounds Working Pressure

Style F Vertical. Style E Horizontal

Prices and Dimensions quoted on application.

WEBSTER STEAM AND OIL SEPARATORS**STEAM SEPARATORS****HORIZONTAL—CLASS C**

B1156

OIL SEPARATORS**STANDARD HORIZONTAL**

B1157

Only two patterns are here illustrated.

Write for special catalogue giving dimensions, complete description, and duty of the different types. Prices are quoted on application. State fully the conditions and requirements.

Classes C (Horizontal) and B (Vertical) are of cast iron construction, intended for ordinary service, where it is desired to separate the moisture from live steam and prevent a large amount of condensation from being carried into the engine cylinder. They are designed for a maximum working pressure of 150 pounds to the square inch. The vertical separator, Class B, is for downward flow of steam only, and is made in sizes from 2-inch to 6-inch. Horizontal, Class C, is made in sizes from 2-inch to 12-inch.

Class A, horizontal, and Class D, vertical (not illustrated), are for maximum working pressure of 250 pounds. They are of combination steel and cast iron construction. Class A is made 8-inch to 20-inch sizes. Class D is made 2 to 16-inch sizes, and for downward flow of steam only.

OIL SEPARATORS

Illustration is of the Horizontal 8-inch to 16-inch style, the 2-inch to 6-inch pattern having a round instead of a square body.

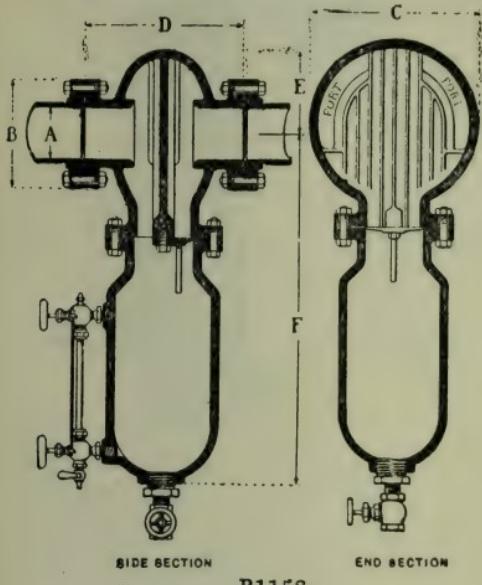
These Oil Separators can also be furnished for condensing service. Sizes 8-inch to 20-inch can be furnished of combination steel and cast iron construction.

Oil Separators are also made **Vertical Pattern**, and all styles and sizes are fully described in special Webster catalogue of Separators.

COCHRANE SEPARATORS

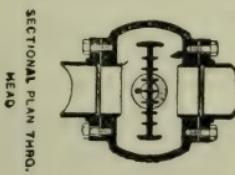
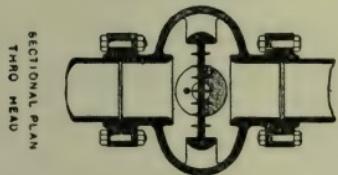
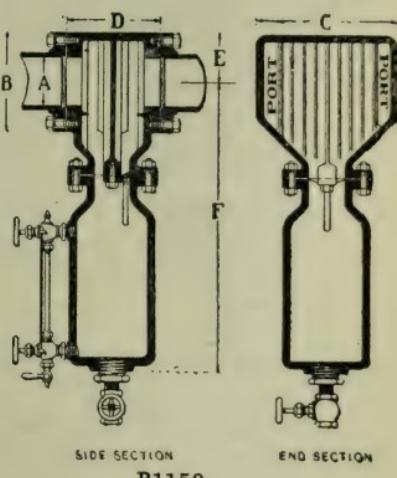
HIGH PRESSURE STEAM

HORIZONTAL PATTERN



STANDARD OIL SEPARATOR

HORIZONTAL PATTERN



Vertical Separators also furnished.

Net prices quoted on application. State conditions and requirements.

Special Catalogue of Cochrane Separators giving complete description, etc., furnished on application.

The High Pressure Steam Separator is for Steam, Compressed Air, etc., for any pressure up to 200 lbs. per square inch. Special patterns made for higher pressure.

Receiver Pattern Separator, having capacity for large amount of condensation, in Horizontal Vertical pattern, described in the special catalogue. The horizontal 3 to 7 inch sizes are cast iron, larger sizes and vertical are partially of wrought steel construction.

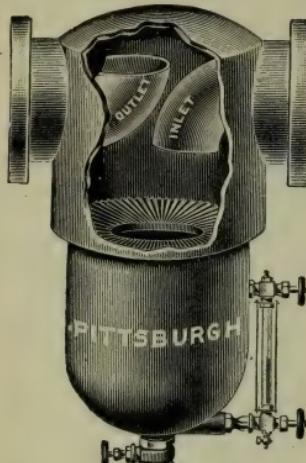
Standard Oil Separator, Horizontal or Vertical, is intended for the exhaust of non-condensing engines, and for use on live steam mains of pressure not over 125 lbs.

Cochrane Vacuum Oil Separator, (not illustrated) is of entirely different design from above illustrations. They take the oil out of exhaust from condensing engines and the vacuum is not interfered with.

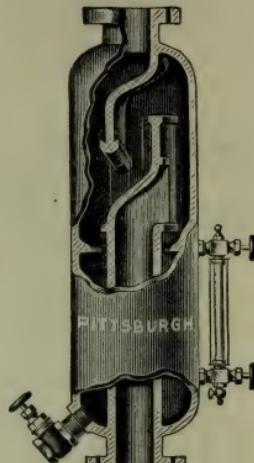
Write for Cochrane Separator Catalogue.

"PITTSBURGH" STEAM AND OIL SEPARATORS

For Live or Exhaust Steam

HORIZONTAL

B1160

VERTICAL

B1161

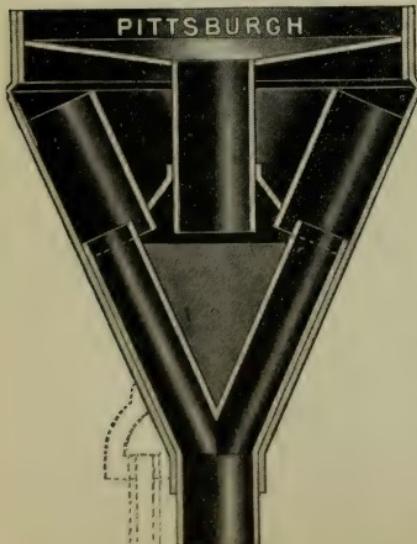
| Pipe Size | inches | 1½ | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 | 10 | 12 |
|------------------------------|--------------|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|
| Price | each | 30. | 40. | 45. | 50. | 60. | 70. | 75. | 80. | 110. | 125. | 160. | 220. | 250. |
| Between { Horizontal... | Screwed Ends | 9½ | 10 | 12½ | 12½ | 14½ | 14½ | 14½ | 17½ | 18½ | 20½ | 26 | 30½ | |
| Flanges, in. { Vertical..... | | 19½ | 22½ | 26½ | 26½ | 30½ | 30½ | 34½ | 39 | 44 | 49 | 54 | | |

Horizontal Pattern also made 14-inch, \$300.00; 16-inch, \$400.00.

Prices include Flanges with Bolts and Nuts, Water Gauges, Outlet Valve, and Connection.

Made of best quality of gray iron. Extra heavy throughout and tested to 250 pounds hydrostatic pressure.

Steel Receiver Separators Constructed for Special Conditions



"PITTSBURGH"
VACUUM EXHAUST HEAD

B1162

| Exhaust Pipe | 1 or 1½ | 2 or 2½ | 3 or 3½ | 4 or 4½ | 5 | 6 | 7 |
|--------------|---------------|---------------|---------------|---------------|------|------|------|
| Each | 20. | 25. | 30. | 40. | 50. | 60. | 75. |
| Exhaust Pipe | 8 | 9 | 10 | 12 | 13 | 14 | .... |
| Each | 90. | 105. | 125. | 150. | 175. | 200. | .... |

15-inch, \$235.00; 16-inch, \$250.00; 17-inch, \$270.00; 18-inch, \$300.00. Larger sizes on application.

Six-inch and larger sizes are flanged, and provided with Companion Flanges and Bolts.

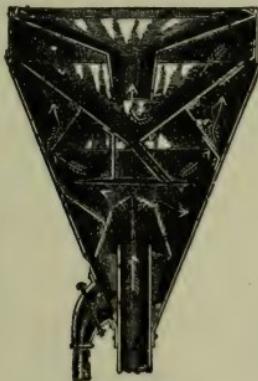
GREENAWAY CAST-IRON EXHAUST HEAD

B1163

| Size of Exhaust Pipe | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 3 1/2 | 4 | 4 1/2 | 5 |
|----------------------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| Price | 10.00 | 11.00 | 13.00 | 14.00 | 16.00 | 18.00 | 21.00 | 24.00 | 28.00 |
| Size of Exhaust Pipe | 6 | 7 | 8 | 9 | 10 | 12 | 14 | 16 | 18 |
| Price | 34.00 | 42.00 | 58.00 | 72.00 | 88.00 | 120.00 | 180.00 | 230.00 | 270.00 |

Heads up to and including four inches are screwed ends, sizes above four inches are flanged and supplied with companion flange and bolts.

Larger sizes quoted on application.

GALVANIZED EXHAUST HEAD

B1164

| Size of Pipe...inch. | 1 or 1 1/2 | 2 or 2 1/2 | 3 or 3 1/4 | 4 or 4 1/2 | 5 | 6 | 7 | 8 | 9 | 10 | 11 or 12 | 14 | 15 | 16 | 18 |
|-----------------------------|------------------|------------------|------------------|------------------|----|----|----|-------|-------|-------|----------------|-----|-------|-------|-----|
| Price | 20 | 25 | 30 | 40 | 50 | 60 | 75 | 90 | 105 | 125 | 150 | 200 | 235 | 250 | 300 |
| Drip Outlet to Head...inch. | 1 1/4 | 1 1/4 | 1 1/2 | 1 1/2 | 2 | 2 | 2 | 2 1/2 | 2 1/2 | 2 1/2 | 3 | 3 | 3 1/4 | 3 1/4 | 4 |

Sizes 9-inch and less have screwed coupling; larger size flanged. Companion flange not included in price.

Larger sizes quoted on application.

SWARTWOUT EXHAUST HEADS**CAST IRON****B1165****CONDENSER TYPE****B1166**

| Exhaust Pipe .....inches | 1 or 1½ | 2 or 2½ | 3 or 3½ | 4 or 4½ | 5 | 6 | 7 | 8 | 10 |
|--------------------------|------------|------------|------------|------------|--------|--------|--------|--------|--------|
| Price.....each | 20.00 | 25.00 | 30.00 | 40.00 | 50.00 | 60.00 | 75.00 | 90.00 | 125.00 |
| Exhaust Pipe .....inches | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 30 | 36 |
| Price.....each | 150.00 | 200.00 | 250.00 | 300.00 | 360.00 | 450.00 | 600.00 | 900.00 | 1200. |

Sizes 5 inch and less are screwed. Larger sizes are flanged with companion flanges and bolts.

These heads are put together in sections, having a joint just below the drip.

GLOBE VENTILATOR

Galvanized Iron

**B1167****PROPELLER FAN
With Electric Motor****B1168**

Quoted on application.

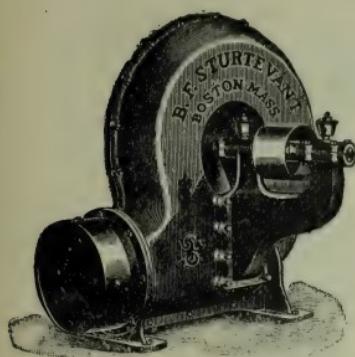
GLOBE VENTILATORS

| Size....ins. | 2 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 24 |
|--------------|------|------|------|------|------|------|------|------|-------|-------|------|-------|
| Each..... | 1.00 | 1.50 | 1.75 | 2.50 | 3.40 | 4.65 | 5.75 | 6.75 | 13.00 | 20.00 | 7.70 | 40.00 |

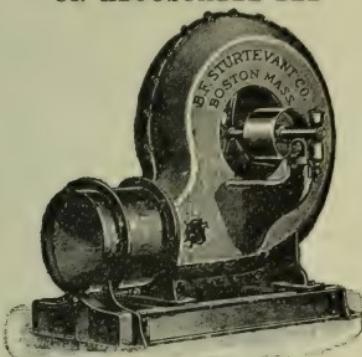
Also other sizes, up to 60-inch, quoted on application.

STURTEVANT MONOGRAM BLOWERS AND EXHAUSTERS

ON ADJUSTABLE BED



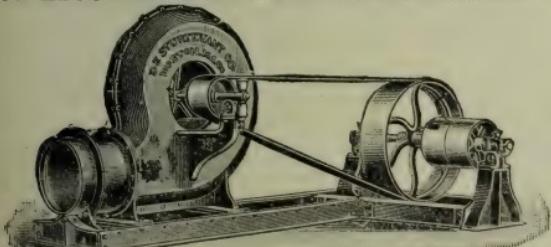
B1169



B1170

| Number | SIZE OF PULLEY | | WITHOUT ADJUSTABLE BED | | | ON ADJUSTABLE BED | | | |
|--------|------------------|------------------|---|--|------------|------------------------------------|------------|---|--|
| | Diameter, Inches | Face, Inches | Outside Diameter of Inlet of Outlet, Inches | Outside Diameter of Inlet of Exhaust, Inches | Price Each | No Counter-shaft | | With Countershaf | |
| | | | | | | Outside Diameter of Outlet, Inches | Price Each | Diameter of Pulley Driving Blower, Inches | Diameter of Pulley Driven by Main Belt from Line Shaft, Inches |
| 0000 | 1 $\frac{1}{8}$ | 1 $\frac{1}{4}$ | 2 $\frac{3}{4}$ | 3 $\frac{5}{8}$ | 12.00 | ... | ... | ... | ... |
| 00 | 2 $\frac{1}{8}$ | 1 $\frac{1}{4}$ | 4 $\frac{1}{8}$ | 4 $\frac{1}{8}$ | 15.00 | ... | ... | ... | ... |
| 0 | 3 | 2 $\frac{1}{8}$ | 4 $\frac{3}{8}$ | 5 $\frac{3}{4}$ | 20.00 | ... | ... | ... | ... |
| 1 | 3 $\frac{1}{2}$ | 2 $\frac{1}{2}$ | 5 $\frac{1}{4}$ | 6 $\frac{1}{2}$ | 26.00 | ... | ... | ... | ... |
| 2 | 4 $\frac{1}{8}$ | 3 $\frac{1}{4}$ | 7 $\frac{1}{2}$ | 7 $\frac{1}{2}$ | 33.00 | ... | ... | ... | ... |
| 3 | 5 $\frac{1}{8}$ | 4 | 9 | 9 | 44.00 | ... | ... | ... | ... |
| 4 | 6 | 4 $\frac{1}{4}$ | 10 $\frac{1}{8}$ | 10 $\frac{1}{2}$ | 55.00 | 11 $\frac{1}{8}$ | 90.00 | 28 | 10, 12, 14, |
| 5 | 6 $\frac{1}{8}$ | 5 $\frac{1}{4}$ | 12 $\frac{1}{4}$ | 12 $\frac{1}{4}$ | 70.00 | 13 $\frac{1}{8}$ | 115.00 | 32 | 12, 14, 16, |
| 6 | 8 | 6 $\frac{1}{2}$ | 14 $\frac{1}{8}$ | 15 | 90.00 | 15 $\frac{1}{2}$ | 150.00 | 36 | 12, 14, 16, 18, |
| 7 | 8 $\frac{1}{2}$ | 7 $\frac{1}{2}$ | 16 $\frac{1}{8}$ | 16 $\frac{1}{8}$ | 150.00 | 17 $\frac{1}{8}$ | 240.00 | 42 | 14, 16, 18, 20, |
| 8 | 10 $\frac{1}{4}$ | 8 $\frac{1}{8}$ | 18 $\frac{1}{4}$ | 18 $\frac{1}{8}$ | 200.00 | 20 $\frac{1}{8}$ | 315.00 | 42 | 18, 20, 22, 24, |
| 9 | 12 | 10 $\frac{1}{2}$ | 21 $\frac{1}{4}$ | 21 $\frac{1}{2}$ | 250.00 | 23 $\frac{1}{4}$ | 415.00 | 48 | 18, 20, 22, 24, |
| 10 | 13 $\frac{3}{4}$ | 11 $\frac{1}{4}$ | 24 $\frac{5}{8}$ | 24 $\frac{1}{2}$ | 325.00 | 25 $\frac{1}{4}$ | 550.00 | 54 | 18, 20, 22, 24, |
| | | | | | | | | | 750.00 |

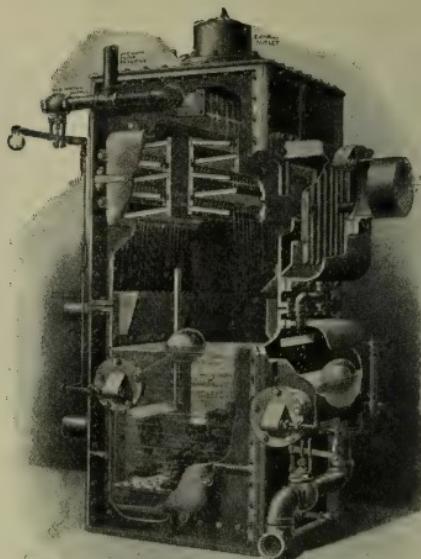
ON ADJUSTABLE BED WITH COUNTERSHAFT



B1170 1/2

The Monogram Fans, so called because of monogram "B. F. S." on side, are built either as Blowers, with two inlets and a bearing on each side, or as Exhausters with inlets on pulley side closed.

Pressure Blowers, and Exhaust Fans of any style and for all purposes quoted on specification.

COCHRANE FEED-WATER HEATERS

B1172

THE COCHRANE SPECIAL FEED-WATER HEATERS AND RECEIVERS

Which take the place of independent oil separators and traps, closed feed-water heaters and traps, expansion and return tanks, and pump governors.

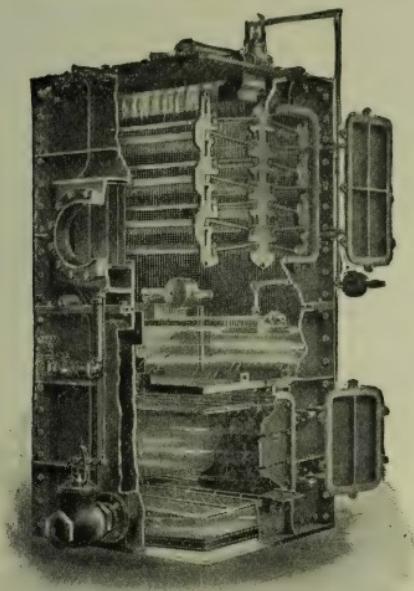
Sizes: Horse-power 50, 75, 100, 150, 200, 250, 300, 450. Prices quoted on application.

CONSTRUCTION DETAILS

This design of the Cochrane Heaters is specially adapted for use in connection with any kind of an exhaust steam heating or drying system —under vacuum, under back pressure, etc. Besides performing all the regular functions of an open or direct contact feed-water heater, it provides for the reception and heating of the condensation returned to it from the heating system. The supply of cold water required to supplement the exhaust condensed in the heater and the returns from the heating system, is accurately and automatically regulated. The drip from oil separator and the overflow from heater are passed to waste through a steam trap forming a part of the heater. The construction gives the greatest possible durability and longevity, with freedom from repair, with ease of operation and with facilities for thorough and rapid cleaning.

Other models of Cochrane Heaters and Purifiers quoted on application. State clearly duty required. Write for descriptive catalogue.

WEBSTER STAR-VACUUM
FEED WATER HEATER, PURIFIER, FILTER, AND
RECEIVER



B1175

CLASS "E. C." TYPE

For Boilers of 50 to 450 Horse-Power

An exhaust steam feed water heater in combination with a filter and precipitating chamber and oil separator complete. The water supply to the heater and overflow are controlled automatically. When desirable a special boiler feed-pump governing-valve may be furnished instead of the regular float regulator.

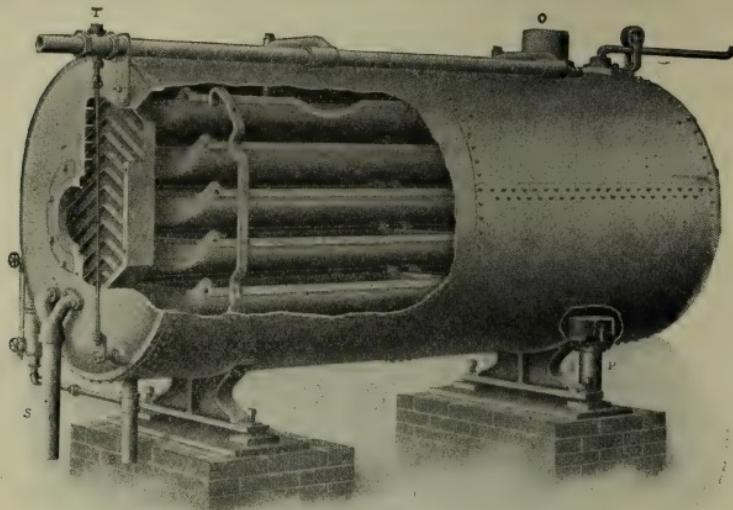
For Capacities of 500 to 5,000 H. P., the above heater, filter, receiver, and oil separator is made in horizontal cylindrical shape, known as Class "E. D." style.

Webster "Star-Vacuum" Feed Water Heater and Purifier, Class "A," is a heater, purifier, and oil separator, but has no filter attachment, is for 50 to 650 H. P. boilers. When intended for pressure from atmosphere to 10 pounds, especially for low pressure steam heating, a heater known as Class "E. A." is made.

The Webster Feed Water Heater and Chemical Purifier is fully described in a special circular which will be furnished on application.

Prices of Webster Heaters, etc., quoted on application. State conditions and requirements fully. We can furnish special catalogue giving full description of each style apparatus.

HOPPES FEED-WATER HEATER AND PURIFIER STANDARD TYPE



B1177

Prices and descriptive catalogue furnished on application. State conditions and requirements, and horse-power.

Write for special catalogue of Hoppes Heaters. It fully describes the different patterns, etc.

The cut illustrates the standard steel pan open type of Feed-Water Heater. This Heater is designed somewhat after the Purifier in that the same form and style of pans are used. The shell is of steel plate, and heads are of cast iron, the front one being removable for taking out the pans for inspection or cleaning.

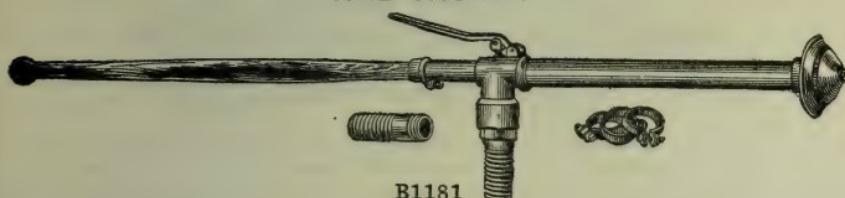
The exhaust steam enters at the back end, and after passing through the large oil eliminator, the purified steam enters the Heater proper, from which it escapes through the pipe O at front end.

The water, on entering the Heater at T, is fed into the top pan, and, overflowing the edges, follows the under side of the pan to near center, when it drops into the next pan below. It flows over each successive pan in the same manner until it reaches the chamber at the bottom, from which it passes to the pump through pipe P.

While the Heater is in operation, the water flowing along the under side of the pans comes in direct contact with the exhaust steam passing through the Heater, and in this manner the water is heated without the heat having to pass through the pans or lime already formed thereon.

The insides of the pans afford settling chambers for the mud and solids in suspension, while the lime and other solids in solution form on the under side of the pans. The water is thus not only heated to the highest degree obtainable by exhaust steam, but all of the solids that are separated at that temperature are caught and retained in the Heater.

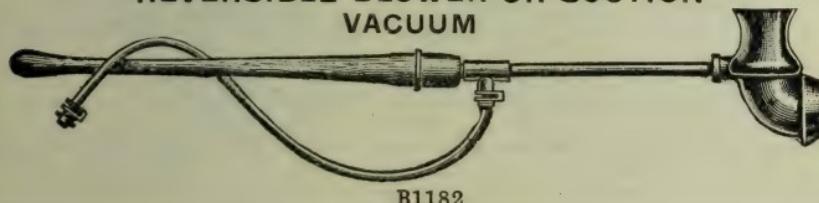
STEAM FLUE BLOWERS RED JACKET



| Number..... | 1 | 2 | 3 | 4 | 5 | 6 |
|-------------------------------|----------------------|------------------------------------|----------------------|------------------------------------|----------------------|-----------------|
| Outside Diam. Tube.....inches | 2 to 2 $\frac{1}{4}$ | 2 $\frac{1}{2}$ to 3 $\frac{1}{4}$ | 3 to 3 $\frac{1}{4}$ | 3 $\frac{1}{2}$ to 3 $\frac{3}{4}$ | 4 to 4 $\frac{1}{2}$ | 5 to 6 |
| Price | each | 5.00 | 6.25 | 7.50 | 8.75 | 10.00 |
| Size Hose.....inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | 1 | 1 $\frac{1}{4}$ | 1 $\frac{1}{2}$ |

Hose is extra.

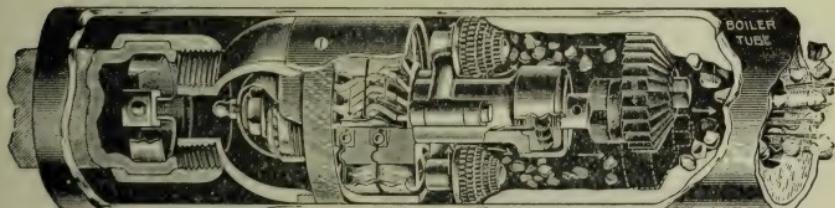
REVERSIBLE BLOWER OR SUCTION VACUUM



| Tube | 2 | 2 $\frac{1}{2}$ | 3 | 3 $\frac{1}{2}$ | 4 | 4 $\frac{1}{2}$ | 5 |
|-----------------------------|-------|-----------------|-------|-----------------|-------|-----------------|-------|
| Price, with Handle... .each | 13.50 | 14.00 | 14.50 | 15.00 | 15.50 | 16.00 | 16.50 |

Price does not include hose and couplings.
If without Handle and Fittings, deduct \$3.50.

GOODFELLOW'S PATENT WATER TUBE CLEANER



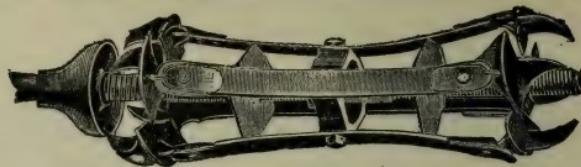
B1183

For 3-inch Tube, \$65.00. For 3 $\frac{1}{2}$ -inch Tube, \$70.00. For 4-inch Tube, \$75.00.

Above measurements are outside diameter of tubes.
Price does not include hose and auxiliary tools.

Designed to be driven by water and is the only cleaner of its type that has double turbine power wheels. The first power drives the ruffer-out tool, which is revolved and gyrated around upon its crank shaft, leaving the scale at a minimum thickness. The second power drives the finishing cutters in opposite directions. In the movement of these three cutters they are pushed out and do not depend upon centrifugal force. Each set of cutters have a blank follower wheel which prevents the larger cutter of the sets from acting upon the tube surface.

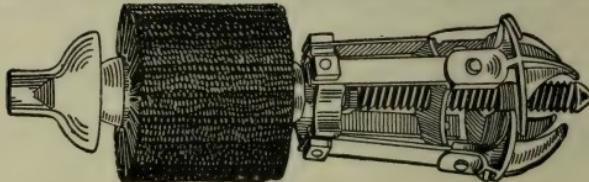
They are made of the best steel and bronze, with or without ball bearings, are self-oiling, and work quickly through the scale of any mineral formation. They may be had with novel auxiliary tools adapted to make connections with the central shaft, and by a flexible shaft may be projected far in advance of the power head, a feature never before used on any other cleaner of its type.

ENGINEERS' FAVORITE TUBE SCRAPER

B1184

| | | |
|---|----------|------|
| Sizes, 1½ to 4-inch (outside diameter of tube)..... | per inch | 1.00 |
|---|----------|------|

Smaller sizes than 2 inch are priced same as 2 inch.

COMBINATION TUBE BRUSH AND SCRAPER

B1185

| | | |
|--|----------|------|
| Sizes, 2 to 6 inches (outside diameter of tube)..... | per inch | 1.00 |
|--|----------|------|

PERFECT TUBE CLEANER

B1186

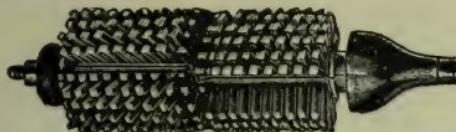
| | | |
|--|----------|------|
| Sizes, 2 to 4 inches (outside diameter of tube)..... | per inch | 1.00 |
|--|----------|------|

RUGGLES PERFECTION TUBE CLEANER

B1187

| Size (outside diam. of tube).....inches | 2 or less | 2½ | 2½ | 2¾ | 3 | 3¼ |
|--|-----------|------|------|------|------|------|
| Each..... | 2.00 | 2.25 | 2.50 | 2.75 | 3.00 | 3.25 |
| Size (outside diam. of tube).....inches. | 3½ | 4 | 4½ | 5 | 6 | .... |
| Each..... | 3.50 | 4.00 | 5.00 | 6.00 | 7.00 | .... |

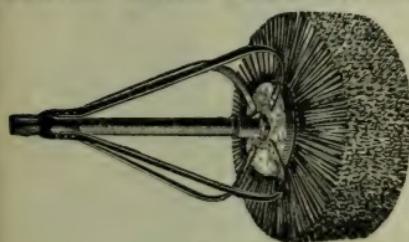
Wire Cable Flexible Handles, 12 to 18 feet long. Each \$4.00.

EXPANSION WIRE TUBE BRUSHES

B1188

| | |
|---|------|
| Price per inch (outside diam. of tube)..... | 1.00 |
|---|------|

Sizes, 1½-inch to 9-inch. Smaller than 2-inch is priced as 2-inch.

LARGE WIRE FLUE BRUSH

B1189

Per Inch Diameter. \$1.00.
Sizes, 8-inch to 36-inch Flues.

**SPIRAL WIRE TUBE
BRUSHES**

B1190

Per inch outside diameter of Tube, \$1.00.
Made 1½ to 4-inch sizes.

FOLDING RODS FOR BOILER TUBE CLEANERS—B1191

Made of White Ash Wood



| Number..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------------------------------|------|------|------|------|------|------|------|------|
| Length, First Section.....feet | 6½ | 5½ | 4½ | 15 | 13 | 11 | 10 | 8 |
| " Second Section..... " | 6½ | 5½ | 4½ | 6 | 6 | 6 | 5 | 5 |
| " Over All..... " | 13 | 11 | 9 | 21 | 19 | 17 | 15 | 13 |
| Price..... each | 5.76 | 5.60 | 5.44 | 6.40 | 6.24 | 6.08 | 5.90 | 5.76 |

| Number..... | 9 | 10 | 11 | 12 | 13 | 14 | 15 | ..... |
|------------------------------------|------|------|------|------|------|------|------|-------|
| Length, 1st, 2d & 3d Sections.feet | 7 | 6½ | 5½ | 5 | 4½ | 3½ | 3 | ..... |
| " Over All..... " | 21 | 19 | 17 | 15 | 13 | 11 | 9 | ..... |
| Price each | 8.40 | 8.24 | 8.08 | 7.92 | 7.76 | 7.60 | 7.44 | ..... |

BOILER BRUSHES

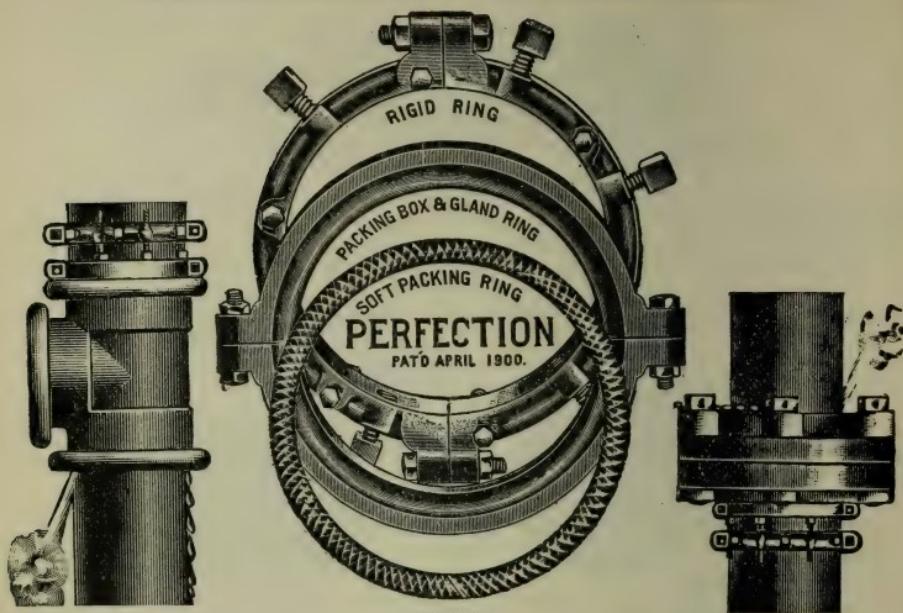
B1192



B1193

Prices on application.

PERFECTION LEAK CLOSING CLAMP



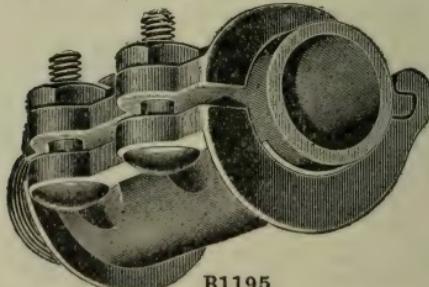
B1194

Guaranteed to stop all leaks on steam, air, gas, water, vacuum and ammonia piping which leak at threads or peaned joints next to any fitting.

| Pipe size.....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 |
|-----------------------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Each..... | 2.35 | 2.85 | 3.00 | 3.35 | 3.90 | 4.35 | 4.50 | 5.50 | 6.50 | 7.50 |
| Pipe size..... inches | 9 | 10 | 12 | 14 | 15 | 16 | 18 | 20 | 22 | 24 |
| Each..... | 8.00 | 9.00 | 11.00 | 13.00 | 14.00 | 15.00 | 17.00 | 19.00 | 21.00 | 23.00 |

Larger sizes quoted on application.

EMERGENCY PIPE CLAMP



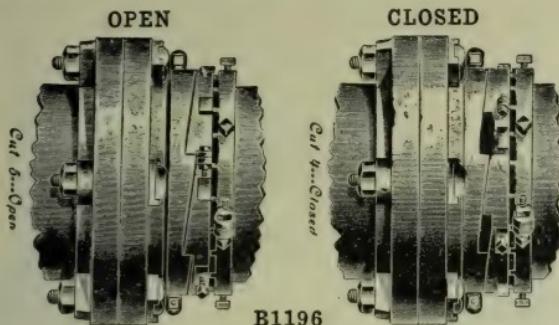
B1195

For stopping holes or splits in pipes.

| Size.....inches | ½ | ¾ | 1 | 1¼ | 1½ | 2 | 2½ | 3 | 3½ | 4 |
|------------------------|-----|-----|-----|-----|-----|-----|------|------|------|------|
| Length overall, inches | 3¼ | 3¼ | 3½ | 3¾ | 4 | 4¼ | 4½ | 5 | 5½ | 6 |
| Price.....each | .40 | .45 | .50 | .60 | .70 | .80 | 1.00 | 1.25 | 1.50 | 2.00 |

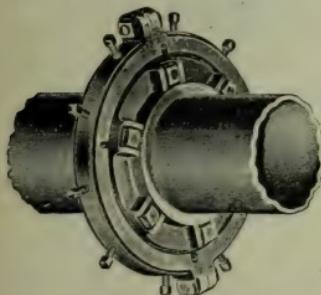
½-inch to 2-inch inclusive, packed 12 in a box.

2½-inch to 4-inch inclusive, packed 6 in a box.

KING BEE LEAK CLOSING CLAMP

Prices on application.

Clamp is closed by driving the loose ring around a fraction of a turn, by placing a block against the lug and driving it with a hammer. No large threads to turn.

**FLANGE CLAMP**

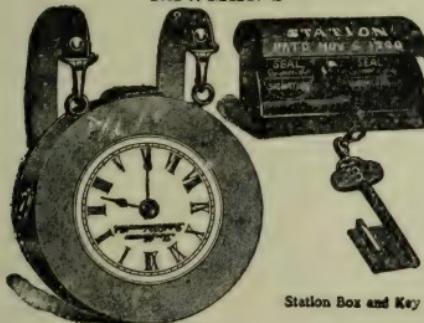
B1197

Prices on application. State diameter of Flange.

For closing leak between two flanges.

PORTABLE WATCHMAN'S CLOCKS

NEWMAN'S



Station Box and Key

B1198

| | | |
|--|------|-------|
| Price, Nine Station Clock, complete..... | each | 50.00 |
| " Sixteen Station Clock, complete..... | " | 55.00 |
| " Additional Stations..... | " | 1.75 |

The case is made of aluminum for lightness and to prevent tarnishing or injury from acids or grease.

Nine key weighs about 24 ounces, and sixteen key about 32 ounces.

The Dial is arranged for twenty-four hours; this gives a record for Sunday registering when necessary.

The Keys are made of Delta metal which will neither rust nor corrode. The Seals cover the screws that fasten the box to the wall.



B1200



B1201

STEEL OILERS

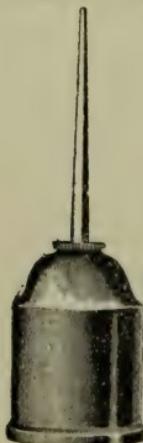
With Spring Bottom

State whether straight
or bent spout is wanted.

| Capacity, Pint | Diameter, Inches | Length Spout, Inches | COPPERIZED | | POLISHED STEEL | |
|-------------------|---------------------|----------------------------|------------|-----------|----------------|-----------|
| | | | Number | Per Dozen | Number | Per Dozen |
| 1/4 | 2 3/4 | 2 1/2 | 12 | 4.50 | 8 | 4.50 |
| 1/3 | 3 3/8 | 3 | 13 | 5.50 | 9 | 5.50 |
| 2/3 | 3 3/8 | 5 | 13A | 6.00 | 9A | 6.00 |
| 3/4 | 3 3/8 | 9 | 14 | 6.50 | 10 | 6.50 |
| 1/2 | 3 3/4 | 3 | 14A | 7.50 | 10A | 7.50 |
| 7/8 | 3 3/4 | 5 | 14AA | 8.00 | 10AA | 8.00 |
| 1/2 | 3 3/4 | 9 | 14B | 8.50 | 10B | 8.50 |
| 1 | 4 1/4 | 3 | 15 | 9.25 | 11 | 9.25 |
| 1 | 4 1/4 | 5 | 15A | 9.75 | 11A | 9.75 |
| 1 | 4 1/4 | 9 | 16 | 10.50 | 11AA | 10.50 |

Packed ½ dozen in box, smaller than 1 pint can be furnished one dozen in box.
Solid Brass Oilers quoted on application.**STEEL SPOUTS. Coppered Steel or Polished Steel, Straight or Bent**

| | | | | | |
|------------|----------------|-------|------|------|------|
| Size..... |inches | 2 1/2 | 3 | 5 | 9 |
| Price..... |per dozen | 2.25 | 2.75 | 3.25 | 4.25 |



B1202

**"No. 600" SPRING BOTTOM
STEEL OILER**

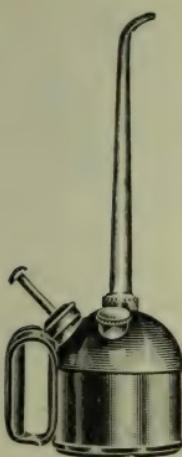
Per dozen, \$5.00.

Heavily copper plated inside and out.

Size ¾-pint, 3-inch diameter, 5-inch spout.

Packed 1 dozen in a box.

PUMP OILERS



B1207

DRIP OILERS



B1209

ENGINEERS'
OILERS

PUMP OILERS WITH DETACHABLE SPOUTS

| Capacity, Pints | Diameter, Inches | Length of Spout, Inches | Copperized Steel | | Tin | |
|--------------------|---------------------|-------------------------------|------------------|-----------|--------|-----------|
| | | | Number | Per Dozen | Number | Per Dozen |
| ½ | 3 | 6 | 400 | 23.15 | 300 | 15.25 |
| 1 | 3 | 7 | 401 | 25.50 | 301 | 17.30 |
| 1 | 3 | 10 | 402 | 25.75 | 302 | 17.50 |
| 1½ | 4 | 12 | 403 | 30.15 | 303 | 21.75 |
| 2 | 4 | 12 | X404 | 32.50 | X304 | 24.00 |
| 2 | 4 | 16 | 405 | 32.75 | 305 | 24.25 |

For Solid Spout (not detachable) Pump Oilers, from above list: ½ pint, deduct, Tin, \$5.45, Copperized, \$6.65; 1 pint, deduct, Tin, \$5.50, Copperized, \$7.00; 1½ pint, deduct, Tin, \$6.20, Copperized, \$7.60; 2 pint, deduct, Tin, \$6.55, Copperized, \$8.00. Brass Oilers quoted on application.

Half pint and one pint packed 1 dozen in a box; larger sizes, ½ dozen in box.

SPOUTS (Nuts Extra)

| | | | | | |
|-------------------------|------|------|------|------|------|
| Length.....inches | 6 | 7 | 10 | 12 | 16 |
| Copperized.....per doz. | 1.25 | 1.35 | 1.75 | 2.10 | 2.25 |
| Tin | 1.10 | 1.20 | 1.35 | 1.70 | 1.90 |

The 6, 7, and 10-inch Spouts fit half and one pint Oilers; 12 and 16-inch fit larger sizes.

Extra parts for these Pump Oilers can be furnished when desired.

ENGINEERS' DRIP OILERS—B1209

| Capacity, Pints | Diameter, Inches | Length Spout, Inches | Copper Plated | | Tin | |
|--------------------|---------------------|----------------------------|---------------|----------|--------|----------|
| | | | Number | Per Doz. | Number | Per Doz. |
| 1 | 3 | 12 | 65 | 5.00 | 61 | 3.00 |
| 1½ | 4 | 14 | 75 | 5.80 | 71 | 3.50 |
| 2 | 4 | 16 | 85 | 6.40 | 81 | 4.00 |

No. 61 packed 1 dozen in a box; larger sizes, ½ dozen in a box.

GEM STEEL OILERS

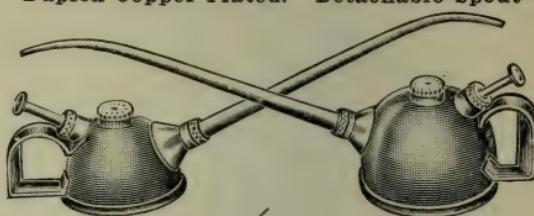
"GEM"

A SEE THE POINT



B1215

| Capacity | pints | $\frac{1}{3}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 |
|------------------------------------|-------|---------------|---------------|---------------|---|
| 4-in. Straight Nozzle.....per doz. | 5.00 | 6.00 | 7.00 | 8.00 | |
| 6 " " " or Curved Nozzle " | 5.50 | 6.50 | 7.50 | 8.50 | |
| 9 " " " " | 6.00 | 7.00 | 8.00 | 9.00 | |

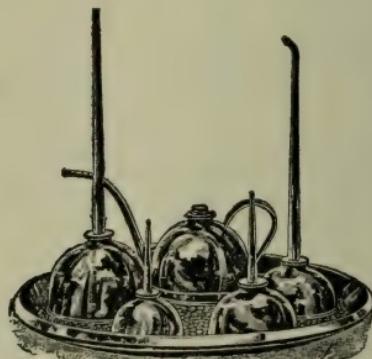
STEEL AUTOMOBILE PUMP OILER
Duplex Copper Plated. Detachable Spout

B1216

| Number | | 800 | 801 | 802 | 803 | 804 |
|---------------|-----------|----------------|----------------|----------------|----------------|----------------|
| Capacity..... | pints | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | 1 | 1 |
| Diameter..... | inches | $3\frac{3}{4}$ | $3\frac{3}{4}$ | $3\frac{3}{4}$ | $4\frac{1}{4}$ | $4\frac{1}{4}$ |
| Spout..... | " | 3 | 5 | 9 | 5 | 9 |
| Price..... | per dozen | 23.00 | 23.50 | 24.00 | 25.25 | 25.75 |

OILER

SETS



B1217

STEEL SETS

Oval Tray

Round Tray

| | Copper Plated | | Nickel Plated | | Copper Plated | | Nickel Plated | |
|----------------------------------|---------------|-----------|---------------|-----------|---------------|-----------|---------------|-----------|
| | No. | Price Set | No. | Price Set | No. | Price Set | No. | Price Set |
| Five Pieces, including Tray..... | 35 | 7.00 | 55 | 8.00 | X30 | 5.00 | 50 | 7.00 |
| Six " " " " " | 45 | 10.00 | 65 | 11.00 | X40 | 7.00 | 60 | 10.00 |

BRASS SETS—With Round Tray

Polished Brass

Nickel Plated

| | No. | Price Set | No. | Price Set |
|----------------------------------|-----|-----------|-----|-----------|
| Five Pieces, including Tray..... | 030 | 6.00 | 050 | 8.00 |
| Six " " " " " | 040 | 9.00 | 060 | 11.00 |

PERFECTION TIN FILLER

BRONZED STEEL OR
BRASS FILLERBRONZED STEEL
TALLOW POT

B1220

Per dozen:
1 Qt., \$6.00. 2 Qt., \$9.60.



B1221



B1222

| | |
|--------------------|-----------|
| Capacity..... | |
| Diameter..... | inches |
| Height..... | " |
| Number..... | 19 |
| Bronzed Steel..... | per dozen |
| Number..... | 14.00 |
| Brass..... | per dozen |

| | B1221 | | | | B1222 | |
|-------|-------|-----------|-------|-------|-------|-------|
| | 1 Pt. | 1 1/4 Pt. | 1 Qt. | 2 Qt. | 1 Qt. | 2 Qt. |
| 4 1/8 | 4 3/4 | 5 | 6 | | 5 | 6 |
| 3 1/2 | 4 | 5 | 6 | | 5 | 6 |
| 19A | 210 | 211 | | 212 | 213 | |
| 17.00 | 20.00 | 24.00 | | 21.00 | 25.00 | |
| 190 | 200 | 201 | | | | |
| 22.00 | 30.00 | 34.00 | | | | |

PERFECTION VALVE OILER



B1223

| | | | | |
|---------------|---------|-------|-------|-------|
| Number..... | 25 | 27 | 29 | 31 |
| Capacity..... | 1/2 Pt. | 1 Pt. | 1 Qt. | 2 Qt. |
| Tin..... | 8.00 | 9.00 | 12.00 | 18.00 |
| Brass..... | 12.00 | 13.50 | 18.00 | 25.00 |
| Nickled.... | 14.50 | 17.00 | 22.50 | 30.00 |

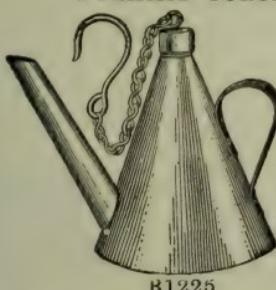


B1224

Capacity, $\frac{1}{2}$ Gal.
Per dozen, \$24.00.

STEEL
TORCH
No. 26

PYRAMID TORCH



B1225

Brazed Steel. Price per dozen: $\frac{1}{2}$ pt., \$7.00; 1 pt., \$9.00; 1 qt., \$10.00; 2 qt., \$12.00. (2 Burner add \$1.00 dozen.) 4 qt. 2 burner, \$15.00.

Sheet Iron. Price per dozen: Single Burner, 1 qt., \$8.00; 2 qt., \$11.00. Double Burner, add \$2.40 dozen.



B1227

\$24.00 per dozen.

B1226

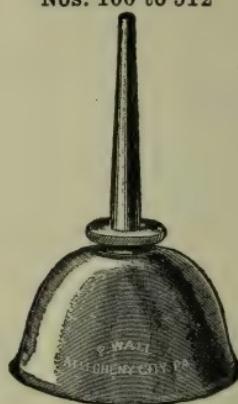
\$12.00 per dozen; height, 15 inches; diameter, 2 inches.

BROAD TOP OILER
Nos. 20, 21, 22 and 23

PYRAMID OILER
Nos. 30, 31 and 32

**EXTRA QUALITY
P. WALL
BRAZED, STEEL OILERS,
ETC.**

Nos. 100 to 512



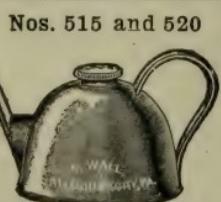
Nozzles 6 inches and longer bent, unless ordered straight.

| Cap., Pint | Diam., In. | No. | Noz., In. | Per Doz. | No. | Noz., In. | Per Doz. | No. | Noz., In. | Per Doz. |
|------------|------------|-----|-----------|----------|-----|-----------|----------|-----|-----------|----------|
| 1/8 | 2 3/4 | 100 | 2 1/2 | 4.00 | 104 | 4 | 4.50 | ... | ... | ... |
| 3/8 | 204 | 4 | 5.00 | 206 | 6 | 5.50 | 209 | 9 | 6.00 | |
| 1/2 | 3 3/4 | 304 | 4 | 6.00 | 306 | 6 | 6.50 | 309 | 9 | 7.00 |
| 3/4 | 4 1/8 | 404 | 4 | 7.00 | 406 | 6 | 7.50 | 409 | 9 | 8.00 |
| 1 | 4 5/8 | 504 | 4 | 8.00 | 506 | 6 | 8.50 | 509 | 9 | 9.00 |
| 1 | 4 5/8 | 512 | 12 | 12.00 | ... | ... | ... | ... | ... | ... |

The following are sent with straight spouts, unless ordered bent:

| No. | Capacity | Nozzle, Inches | Per Dozen | No. | Capacity | Nozzle, Inches | Per Dozen |
|-----|----------|----------------|-----------|-----|----------|----------------|-----------|
| 20 | 1 pt. | 8 | 12.00 | 30 | 1 pt. | 8 | 9.00 |
| 21 | 1 1/2 " | 10 | 12.00 | 31 | 2 " | 10 | 10.00 |
| 22 | 2 " | 12 | 13.00 | 32 | 2 qt. | 12 | 12.00 |
| 23 | 2 qt. | 12 | 15.00 | ... | ... | ... | ... |

Nos. 515 and 520



ENGINEER'S FILLER

TALLOW POT - Nos. 40 and 41

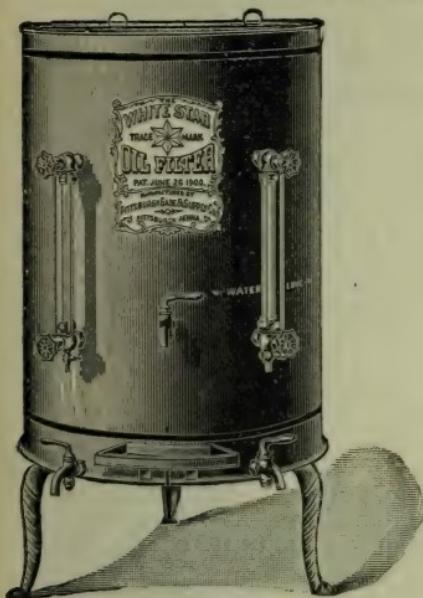
| | | | | |
|---------------------|-------|-------|----------|--------|
| Number..... | 515 | 520 | 40 | 41 |
| Capacity..... | 1 pt. | 2 qt. | 1/2 gal. | 1 gal. |
| Diameter.....inches | 4 1/2 | 6 1/2 | ... | ... |
| Height....." | 3 1/2 | 6 1/2 | ... | ... |
| Price.....per dozen | 12.00 | 18.00 | 15.00 | 18.00 |

ENGINEER'S
TORCH

Per dozen, \$9.00.

THE WHITE STAR OIL FILTER—ROUND TYPE

Saves 50 to 75 per cent in Oil Bills.



B1228

The cost of a White Star Oil Filter is so small in comparison to the savings effected by its use that the original investment is repaid within a few weeks, and thenceforth the oil economy continues as a large net saving in operative expense in any power plant.

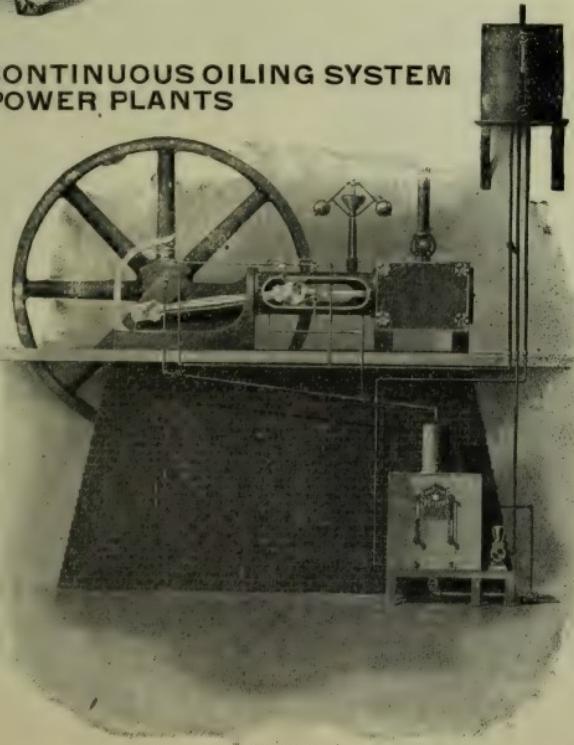
| Number | Filtering Capacity Gallons Daily | CAP. GALS. | | | DIMENS. | | List |
|--------|-------------------------------------|-------------|--------------|-------|--------------|------------------------|--------|
| | | Pure Oil | Dirty Oil | Water | Diam. In. | Total Height In. | |
| 2 | 20 | 12 | 4 | 4 | 16 | 34 | 35.00 |
| 4 | 35 | 20 | 5 | 5 | 18 | 37 | 50.00 |
| 5 | 40 | 24 | 7 | 7 | 20 | 38 | 55.00 |
| 7 | 60 | 32 | 9 | 9 | 22 | 40 | 75.00 |
| 10 | 80 | 44 | 11 | 11 | 24 | 44 | 85.00 |
| 12 | 100 | 55 | 15 | 15 | 26 | 47 | 100.00 |
| 15 | 125 | 80 | 17 | 17 | 29 | 50 | 125.00 |

The filtering capacity of the White Star, under normal working conditions, always equals that given in the table, and is secured without pouring in dirty oil and drawing off the purified oil almost constantly, which is positively necessary in filters with smaller storage capacity.

THE WHITE STAR CONTINUOUS OILING SYSTEM FOR POWER PLANTS

Is a mechanical system for handling the oil, feeding it to all the bearings, catching and filtering the drips and returning the purified oil to a reservoir for feeding again to the bearings. Thus the system is automatic and continuous in operation. The only handling of oil is when it is pumped from the barrel in which it is received to the overhead reservoir from which it is fed by gravity to the bearings, and to which it is returned from the filter.

Further information will be supplied upon application. In writing for estimates, state horse-power, number and type of engines, also the number of gallons of oil used per day.



B1229



**GALVANIZED SELF-CLOSING
OILY WASTE CAN**

B1230

| Number..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------------------|-----------------------|---------|---------|---------|---------|---------|---------|---------|
| Size.....inches | 11 $\frac{1}{4}$ x 15 | 12 x 18 | 13 x 20 | 14 x 22 | 16 x 24 | 18 x 26 | 20 x 20 | 24 x 36 |
| Price ...per dozen | 16.00 | 22.00 | 28.00 | 34.00 | 40.00 | 78.00 | 96.00 | 126.00 |

**GALVANIZED
ROUND BOTTOM
FIRE BUCKET**

B1232

10, 12, or 14 Quart.

Prices on application.



**THE STANDARD
FIRE EXTINGUISHER**

B1235

Is constructed to stand high pressure.

Weight empty, 17 pounds. Charged, 38 $\frac{1}{2}$ pounds.

The "Automatic Regulated Feed" in the Standard Fire Extinguisher thoroughly mixes the chemicals—in sure perfect chemical action—regulates the discharge.

Note.—The Standard is finished in red enamel, polished copper, or nickel plate. The enameled Extinguisher is tinned outside as well as the interior, which makes it more durable and easier kept in good condition than when otherwise finished, especially in buildings and factories where dampness or gases are sure to corrode copper. The enamel, unless the copper is previously coated, will soon be undermined by corrosive action.

Always furnished in red enamel unless otherwise specified.

A charge, with printed directions, included with each Extinguisher.

Price, each, \$20.00.

SAUNDERS PIPE MACHINES**IXL POWER AND HAND MACHINE**

With Adjustable Expanding Die Head With Interchangeable Chasers



B1300

IXL Power and Hand Machine with Adjustable Dies as illustrated with Crank Wheel, Pulley, Countershaft, Nipple Sockets and attachment for solid dies; has oil reservoir over die head; Cuts and Threads $\frac{1}{4}$ in. to 2 in. pipe. Concentric gripping chuck
Hand Machine, same as above except less countershaft
IXL Power and Hand Machine with Solid Dies instead of adjustable
Hand Machine, with Solid Dies, same as Power and Hand, less Countershaft
 The IXL Machine has three changes of speed.

No. 1 Power and Hand Machine, with Countershaft, Universal Gripping Chuck, and Adjustable Die Head, $\frac{1}{4}$ to 2 in. and cut off tool, and Nipple Sockets.....

No. 1 Hand Machine, same as above except less Countershaft.....

No. 1 with Solid Dies, instead of Adjustable Hand \$120.00, Hand & Power.

No. 1 Machines have Oil Reservoir over die head.

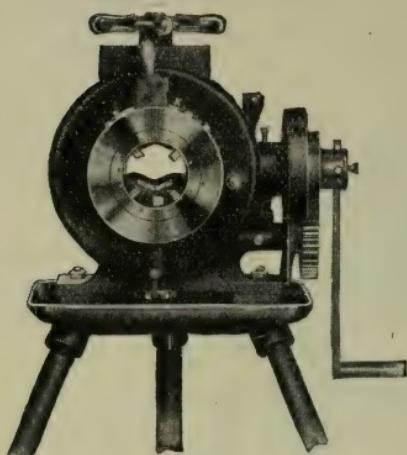
The following machines have oil pump:

| | |
|---|------------------|
| No. 0 Power Machine, Five Die Heads, $\frac{1}{8}$ to $\frac{3}{4}$ in., Lever Grip Chuck | 375.00 |
| No. 2 " " Adjustable Die Head, $\frac{1}{4}$ to 2 in., Universal Chuck.... | 350.00 |
| No. 2A " " with 8 Die Heads, $\frac{1}{4}$ to 2 in. and Lever Grip Chuck | 600.00 |
| No. 2A " " w. 1 Adjust. Head w. interchangeableChaser, LeverGrip | 475.00 |
| No. 3 " " 2 Heads w. $\frac{1}{4}$ to 3 in. Adjust.Chasers, UniversalChuck | 500.00 |
| No. 3F " " 2 " " $\frac{1}{2}$ " 3" " " Lever Grip | 670.00 |
| No. 4 " " 2 " " 1 " 4" " " Universal Chuck | 575.00 |
| No. 4C " " 2 " " 1 " 4" " " Lever Grip | 725.00 |
| No. 5 " " 2 " " $1\frac{1}{4}$ " 6" " " Independent or | |
| | Universal Grip.. |
| No. 6 " " 1 " " $2\frac{1}{2}$ " 8" " " Independent or | 975.00 |
| | Universal Grip.. |
| Larger sizes quoted on application. | 1075.00 |

Can furnish separate die head for each size pipe for any of above machines at special price.

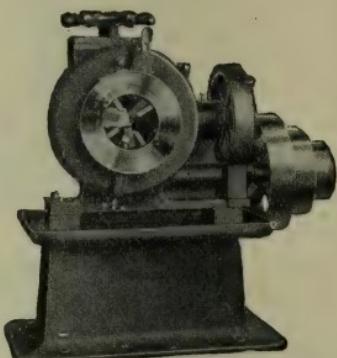
OSTER PIPE MACHINES

HAND MACHINE



B1301

POWER MACHINE



B1302

| Sizes Right Hand | Sets of Dies | Tripod Included Hand Machine | Base Included Power Machine |
|------------------|--------------|---------------------------------|--------------------------------|
| 1/4 in. to 2 in. | 4 | No. 201.... 70.00 | No. 201A.... *110.00 |
| 1 " " 4 " | 4 | " 204.... 150.00 | " 204A.... 260.00 |
| 1 " " 6 " | 6 | " 206.... 250.00 | " 207A.... 425.00 |

No. 207A Machine with direct connected Electric Motor..... 575.00

*No. 201A is mounted on Tripod, same as No. 201.

Nos. 204A and 207A have cast base.

If without Tripod deduct from Nos. 201, 201A, and 204 \$10.00, from No. 206 \$25.00.

A Pipe rest included with each machine.

A Countershaft is included with power machines.

Nos. 204 and 206, also 204A and 207A have **Automatic Cut Off** attachment.

Dies thread two sizes without change.

The 4-inch and 6-inch hand machines have two speeds on one shaft, the change is made quick without removing crank or any part of machine.

The Die Head has a quick opening and setting device; dies are set and released by one movement of the lever. The Adjustable Guides hold the pipe firmly while cutting off. No change off equipment necessary.

Pump works while threading left as well as right-hand threads.

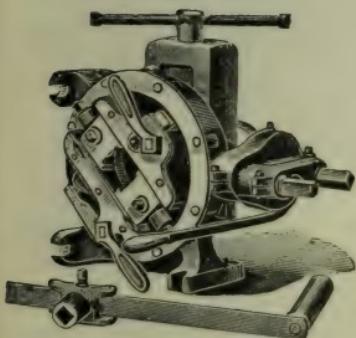
Crank attachment for operating machine by hand is included in the equipment of power machines.

Vise is simple and practical. It centers the pipe perfectly, insuring straight threads.

ARMSTRONG PIPE MACHINES

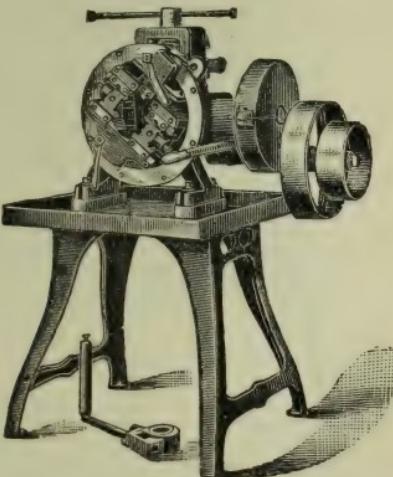
With Quick Opening Dies

No. O MACHINE WITH HAND CRANK, WITHOUT STAND



B1303

No. OO ON STAND WITH POWER ATTACHMENT



B1304

Machines have two speeds, and change is instantly made.
Changes from power to hand can also be made quickly.

**No. O with $\frac{1}{4}$ to 2 in. Pipe Dies, R. H. without Stand, Hand 60.00
" " " " " " " " " " " " " " " " " " *Power 75.00**

If without Dies, deduct \$10.00.

Nipple Holders extra— $\frac{1}{4}$ and $\frac{3}{8}$, \$3.00; $\frac{1}{2}$ and $\frac{5}{8}$, \$3.00; 1 and $1\frac{1}{4}$, \$5.00; $1\frac{1}{2}$ and 2 in., \$5.00.

*Countershaft is extra, \$28.00. Stand extra, \$10.00.

EXTRA DIES are the same as used in No. 2 and No. 3 Stocks. viz., $\frac{1}{4}$ to 1 inch No. 2, and $1\frac{1}{4}$ to 2 inch No. 3. listed B1320. For Combination Pipe and Bolt Machine, take net price of Pipe Threading Machine and add net price of Bolt Dies as listed B1341 $\frac{1}{2}$. For Left Hand Dies, add net price from same list.

SPEED AND WEIGHTS NO. O

Speed of Countershaft, 260 revolutions. Weight of Machine with Dies, 170 lbs. Weight of Stand, 75 lbs. Weight Power Attachment, 30 lbs. Weight Countershaft, 100 lbs.

**No. OO with 1 in. to 4 Pipe Dies, R. H., without Stand, Hand . . . 128.00
" " " " " " " " " " " " " " " " " " *Power . . . 153.00**

If without Dies, deduct \$23.00.

Nipple Holders extra—1 to 2 in., \$25.00; $\frac{3}{4}$ to 2 in., \$27.00; $2\frac{1}{2}$ to 4 in., \$48.00.

*Countershaft extra, \$45.00. Stand extra, \$20.00. Power Attachment separate, \$25.00.

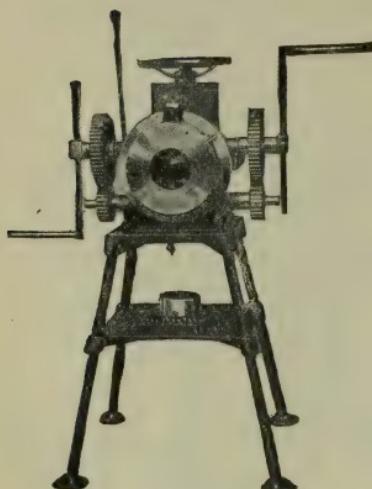
EXTRA DIES are the same as used in No. 3 and No. 6 Stocks. viz., 1 to 2 inch No. 3, and $2\frac{1}{2}$ to 3 inch No. 6. listed B1320. $3\frac{1}{2}$ and 4 inch special Dies, for machine use only, at same list as No. 6 Dies. Left Hand same price as Right Hand Dies.

SPEED AND WEIGHTS

Speed of Countershaft, 300 revolutions. Weight of Hand Machine with Dies, boxed, 475 lbs. Power Machine, 580 lbs. Weight of Stand, 198 lbs. Weight of Power Attachment, 120 lbs. Weight of Countershaft, 206 lbs.

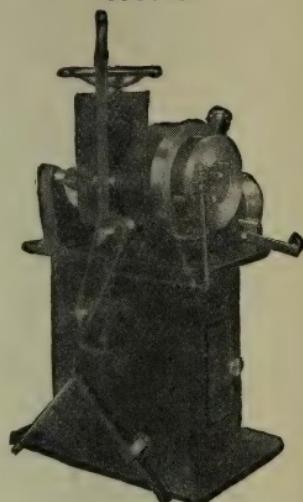
THE LOEW VICTOR PIPE MACHINES

NO. 02



B1305

NO. 4



B1305½

Nos. 1, 2, 02, 3 and 03 have stand, oil pan, and tool benches as illustrated.

| | | | |
|--------|---------|---|--------|
| No. 1 | Threads | $\frac{1}{4}$ to 2 inches, Hand (Geared on one side only) | 80.00 |
| No. 2 | " | 1 to 4 " | 145.00 |
| No. 02 | " | 1 to 4 " (with cut off attachment) | 175.00 |
| No. 3 | " | 1½ to 6 " | 250.00 |
| No. 03 | " | 1½ to 6 " (with cut off attachment) | 280.00 |
| No. 4 | " | 1 to 4 " & Power | 290.00 |
| No. 5 | " | 1½ to 6 " & " | 450.00 |
| No. 6 | " | 1 to 4 " Belt driven | 610.00 |
| No. 06 | " | 1 to 4 " With direct connected electric motor..... | 810.00 |

Extra Dies per set (each set cuts two sizes), No. 1, \$3.00, No. 2 and 02, \$4.00.

Nos. 3 and 5, \$5.00; Nos. 4, 6 and 06, \$4.00.

Extra Cut Off Blades all sizes, each \$1.50.

Nos. 4 and 5 have solid cast-iron base in which is a compartment for tools, etc.

Nos. 6 and 06 have combination solid cast base and lathe bed.

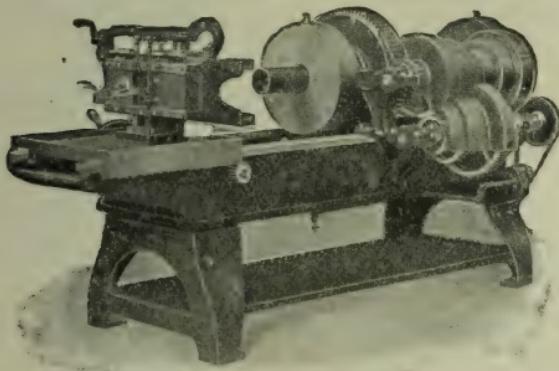
No. 1 has two speeds, No. 2, 02, 3 and 03 have three speeds. No. 4, 5 and 6 are furnished with countershaft, step pulleys, oil pump and cut off attachment.

No. 6 has cut off attachment and oil pump.

Complete descriptive catalogue furnished on application.

**BORDEN PIPE THREADING MACHINES
FOR POWER**

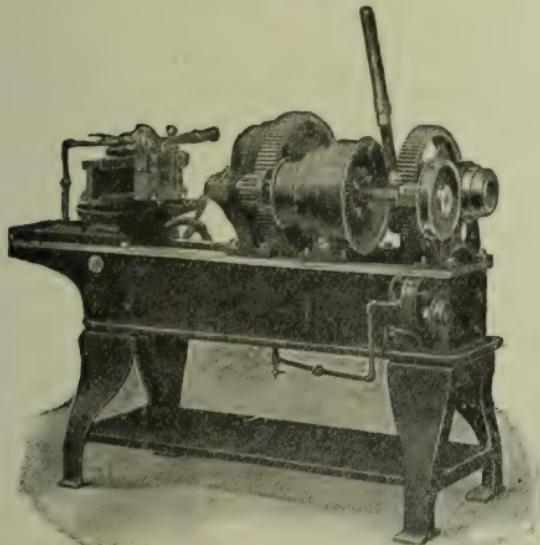
Type E. 1 to 4 inch with Universal Clutches



B1306

Type E. 1 to 4 inch complete, including one set of R. H. Dies, Two Universal Clutches (one on each end of spindle), Rotary Oil Pump, Cutting Off Attachment, and Countershaft. Weight 3,000 lbs., \$640.00.

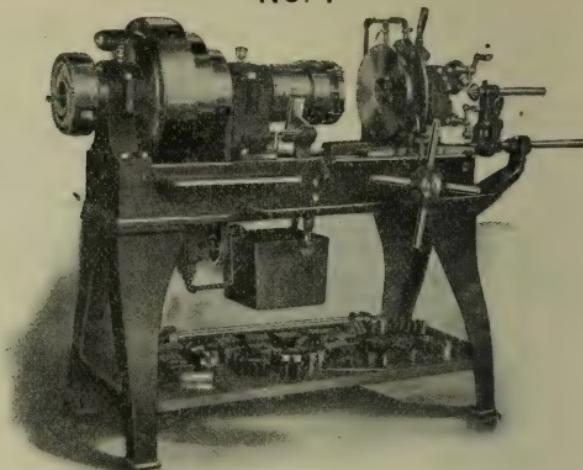
Type E. Same as above except has Quick Gripping Chuck on front of machine and Universal Chuck on back end of machine. Weight 3,200 lbs., \$775.00.

Type A. Rear Side

B1307

Type A. Thread $\frac{1}{2}$ to 2 inch, complete including 1 set of R. H. Dies, Quick Gripping Chuck, Rotary Oil Pump, Cutting Off Attachment, and Countershaft. Weight complete 1,500 lbs., \$450.00.

Type A. With Universal Chuck, see B, \$350.00.

THE MERRILL APEX POWER PIPE MACHINE**No. 1****B1308**

Prices include Countershaft and Automatic Oil Pump and Cutting Off Tool.

| | | |
|--|-------------|--------|
| No. 1 Apex Machine with 8 set Chasers $\frac{1}{4}$ inch to 2 inches, and Reamer Nipple Attachment | add | 350.00 |
| Chasers (5 pieces) | per set | 100.00 |
| Extra Threaded Grippers | " | 8.00 |
| Extra Pipe Grippers | " | 18.00 |
| Weight | pounds | 10.00 |
| Speed Countershaft | revolutions | 2000 |
| | | 275 |
| No. 2 Apex Machine with 8 set Chasers 1 inch to 4 inches* | | 550.00 |
| Nipple Attachment | add | 150.00 |
| Chasers (5 pieces) | per set | 10.00 |
| Extra Grippers, for Pipe | " | 10.00 |
| Threaded Grippers | " | 18.00 |
| Weight | pounds | 3200 |
| Speed Countershaft | revolutions | 200 |
| No. 3 Apex Machine with chasers 1 inch to 6 inches* | | 900.00 |
| Nipple Attachment | add | 250.00 |
| Chasers | per set | 16.00 |
| Extra Grippers, for Pipe | " | 14.00 |
| Threaded Grippers | " | 25.00 |
| Weight | pounds | 4700 |
| Speed Countershaft | revolutions | 200 |

*Reamer Attachment is extra. for No. 2 Machine, \$30.00: No. 3 Machine, \$40.00.

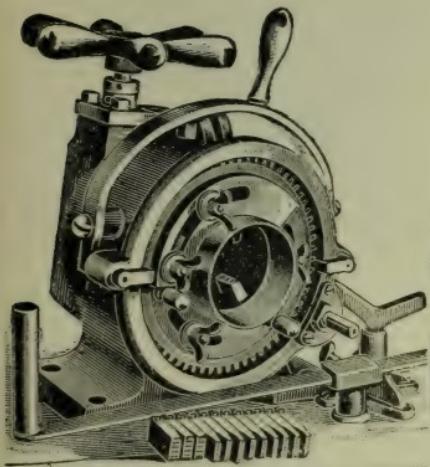
MERRILL PORTABLE HAND PIPE MACHINE

In outline similar to cut B1301, less tripod and pan.

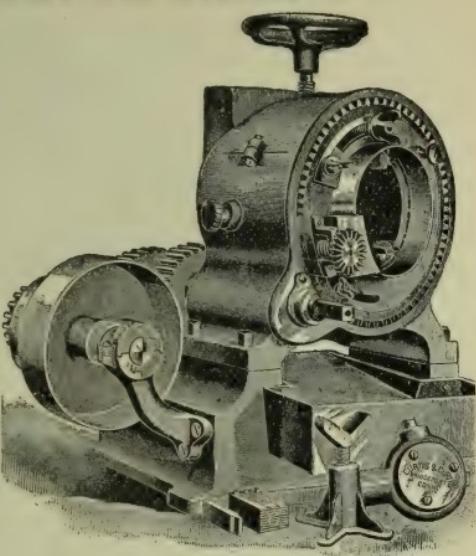
| | |
|---|--------|
| No. 5 with 2 set Chasers 1 inch to 4 inches (weight 275 lbs.) | 100.00 |
| No. 6 " 3 " " 1 " to 6 " { " 390 lbs.) | 190.00 |
| No. 9 " 3 " " 2½ " to 8 " { " 740 lbs.) | 350.00 |
| No. 11 " 3 " " 4 " to 12 " { " 1500 lbs.) | 900.00 |

These Hand Machines are operated either by crank or ratchet lever. They have quick closing and operating die head, and improved cutting off knife.

FORBES' PATENT DIE STOCK



B1309



B1310

HAND MACHINES

HAND OR POWER MACHINES

| Number | RANGE | Net Weight | Net Price | Number | RANGE | Net Weight | Net Price |
|--------|---|------------|-----------|--------|---|------------|-----------|
| *30 | 1/4 to 2 in., R. and L... | 138 | 50.00 | *70 | 1/4 to 2 in., R. and L... | 320 | 100.00 |
| *32 | 1/4 to 2 in., for Solid Dies (without dies) | 145 | 45.00 | *72 | 1/4 to 2 in., for Solid Dies (without dies) | 332 | 95.00 |
| *34 | 1 to 5 in., R. H., 1 to 2 in., L. H. | 175 | 75.00 | *74 | 1 to 3 in., R. H., 1 to 2 in., L. H. | 400 | 125.00 |
| *36 | 3/4 to 3 in., R. H., 3/4 to 2 in., L. H. | 178 | 85.00 | *76 | 3/4 to 3 in., R. H., 3/4 to 2 in., L. H. | 390 | 135.00 |
| *57 | 1/4 to 3 in., R. and L. | 180 | 105.00 | *77 | 1/4 to 3 in., R. and L. | 390 | 155.00 |
| *38 | 1 1/2 to 4 in., R. H. | 288 | 100.00 | *78 | 2 1/2 to 4 in., R. H. | 550 | 140.00 |
| *42 | 1 to 4 in., R. H. | 247 | 110.00 | *80 | 1 1/2 to 4 in., R. H. | 544 | 150.00 |
| *46 | 2 1/2 to 4 in., R. H. | 237 | 85.00 | *84 | 1 to 4 in., R. H. | 560 | 160.00 |
| i50 | 4 to 6 in., R. H. | 330 | 115.00 | *88 | 4 to 6 in., R. H. | 840 | 170.00 |
| i52 | 3 1/2 to 6 in., R. H. | 335 | 130.00 | *90 | 3 1/2 to 6 in., R. H. | 888 | 180.00 |
| i54 | 2 1/2 to 5 in., R. H. | 338 | 150.00 | *92 | 2 1/2 to 5 in., R. H. | 870 | 200.00 |
| i56 | 2 1/2 to 6 in., R. H. | 344 | 175.00 | *94 | 2 1/2 to 6 in., R. H. | 700 | 225.00 |
| i58 | 1 to 6 in., R. H. | 364 | 190.00 | *96 | 1 to 6 in., R. H. | 790 | 250.00 |
| i64 | 2 1/2 to 8 in., R. H. | 648 | 325.00 | †100 | 2 1/2 to 8 in., R. H. | 1500 | 500.00 |
| i65 | 1 to 8 in., R. H. | 646 | 360.00 | †102 | 2 1/2 to 10 in., R. H. | 1900 | 700.00 |
| i66 | 2 1/2 to 10 in., R. H. | 964 | 500.00 | *104 | 2 1/2 to 10 in., R. H. | 2000 | 700.00 |
| i67 | 2 1/2 to 10 in., R. H. | 970 | 500.00 | †107 | 2 1/2 to 12 in., R. H. | 3600 | 900.00 |
| i69 | 2 1/2 to 12 in., R. H. | 2000 | 650.00 | | | | |

Left Hand Dies of any size can be furnished, if desired.

Side Crank Attachment for No. 36 and smaller, \$15.00. For Nos. 38 to 60 Machine, \$20.00. For Nos. 62 to 68 Machine, \$25.00.

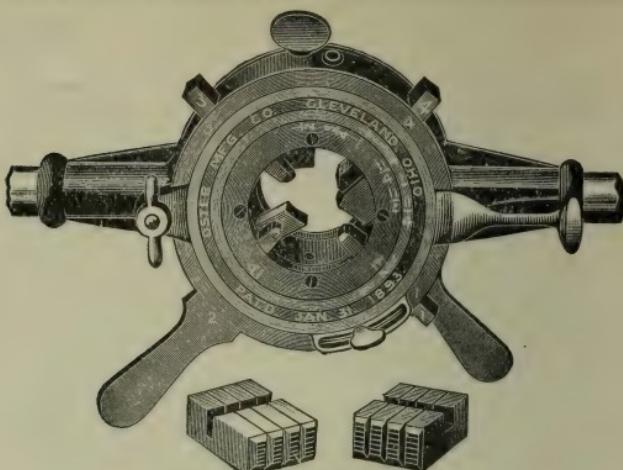
Nos. 30 to 37 and 70 to 77 has no Cut Off Attachment unless specially ordered.

*Pressure feed machine. †Lead screw machine.

Prices Power Machines include countershaft, ratchet wrench and pipe rest.

A ratchet wrench is furnished with No. 38 and larger machines.

OSTER ADJUSTABLE DIE STOCKS



B1312

PRICE LIST WITH RIGHT HAND DIES

| No. of Stock | SIZE OF PIPE EACH STOCK WILL THREAD AND CUT | | | | Without Cut-off | With Cut-off | Net Weight Pounds |
|----------------|---|--|---|---|---|--|------------------------------------|
| | One Set Dies | One Set Dies | One Set Dies | One Set Dies | | | |
| 0 | 1/8 | 1/4 & 3/8 | 1/2 | ..... | 12.00 | 15.00 | 5 |
| 1 | 1/8 | 1/4 & 3/8 | 1/2 & 3/4 | ..... | 13.00 | 16.00 | 8 |
| 1½A | .... | 1/4 & 3/8 | 1/2 & 3/4 | 1 | 14.00 | 17.00 | 8½ |
| 2 | .... | 1/4 & 3/8 | 1/2 & 3/4 | 1 & 1¼ | 17.00 | 20.00 | 15 |
| 3 | .... | .... | 1 & 1¼ | 1½ & 2 | 22.00 | 25.00 | 22 |
| 4 | .... | 1/2 & 3/4 | 1 & 1¼ | 1½ & 2 | 25.00 | 28.00 | 22½ |
| 4½ | 3/8 | 1/2 & 3/4 | 1 & 1¼ | 1½ & 2 | 28.00 | 31.00 | 25 |
| 3 A | .... | .... | .... | 1 to 2 | 20.00 | .... | 20 |
| *5 | .... | .... | 1½ & 2 | 2½ & 3 | 40.00 | 45.00 | 57 |
| *6 | .... | .... | 2½ & 3 | 3½ & 4 | 55.00 | 60.00 | 60 |
| Ratchet Stocks | 7 7½ 7A 8 10 17 | 2½ & 3 | 1 & 1¼ 1/2 & 3/4 2½ & 3 3½ & 4 3½ & 4 | 1½ & 2 1½ & 2 1 to 2 3½ & 4 4½ & 5 6 | 25.00 28.50 22.00 60.00 75.00 150.00 | 28.00 31.50 65.00 90.00 | 27 30 26 64 100 160 |

No. 3 can be fitted with 1/2 and 3/8 Dies at net extra price \$3.00.

*Nos. 5 and 6 have four handles.

No. 17 (not illustrated) is a Geared Die Stock. Can furnish with a Bench Bracket \$5.00 extra or Bench Bracket and Pan \$10.00 extra, or can furnish complete with Bracket, Pan and Tripod Stand, complete, \$170.00.

DIES RIGHT HAND OR LEFT HAND

Each set threads two sizes of pipe, except 1/8 inch and 6 inch dies. Dies for 3A and 7A thread four sizes to the set.

Net Prices, per each set: No. 0, \$1.25; Nos. 1 and 1½A, \$1.50; No. 2, \$1.75; No. 3 and No. 4, \$2.00; No. 3A and No. 7A, \$2.00; No. 7 and No. 7½, \$2.50; No. 4½, \$2.50; No. 5, \$3.00; No. 6 and No. 8, \$3.50; No. 10, \$4.50; No. 17, \$5.00.

Cut-off Blade, net each: Nos. 0 to 4, 30c; Nos. 4½ to 6, 40c; Nos. 7 and 7½, 75c; No. 8, 85c; No. 10, \$1.15.

For Machinists and Bolt Die Stocks, see B1343.

"BEAVER" EASY WORKER DIE STOCKS

Thread All Sizes without Changing Dies

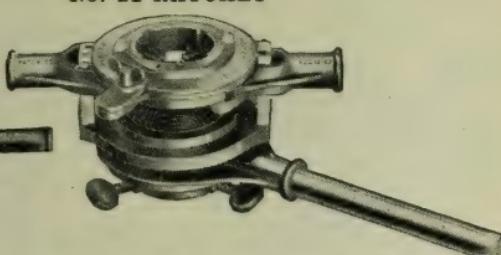
One Man Cuts Any Size

No. 20

No. 22 RATCHET



B1313



B1314

NO. 20

NO. 22

Threads, 1, 1 $\frac{1}{4}$, 1 $\frac{1}{2}$ and 2 in.,
R. H..... 30.00
Extra Dies, per set..... 3.50

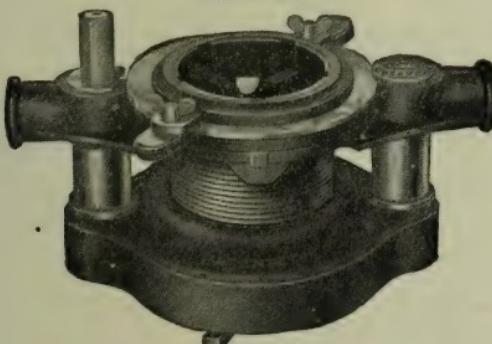
Net weight 18 pounds.

One set of Beaver Dies cut
four sizes, 1, 1 $\frac{1}{4}$, 1 $\frac{1}{2}$ and 2 inches.

The Beaver Dies have fewer teeth, and recede while threading to form the tapered thread. They can be set to thread either over or under standard, if desired.

With a positive cam the one set of dies are set in or out in two seconds to cut any of the sizes of pipe. Each die is a separate tool and easily sharpened. Dies cannot strip threads.

NO. 40



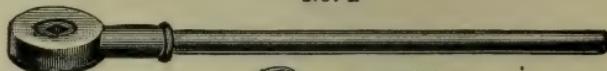
B1315

Threads 2 $\frac{1}{2}$, 3, 3 $\frac{1}{2}$ and 4 inch, R. H..... 110.00
Extra Dies, per set..... 9.00

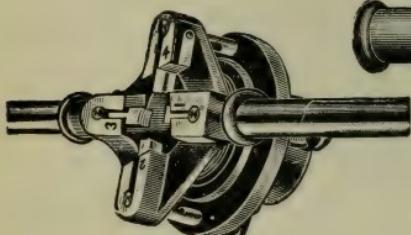
This stock is geared so one man easily threads 4-inch pipe Net weight 75 pounds.

TOLEDO ADJUSTABLE DIE STOCKS

No. 2



No. 1



B1316

PIPE SIZES B1317

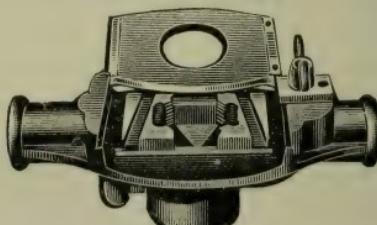
| | | | |
|--------|----------------------------|---------------------------|--------|
| No. 1 | with 4 set Dies, Cutting 1 | to 2 inches..... | 24.00 |
| No. 1A | " 4 " | " 1 to 2 " (Ratchet)..... | 30.00 |
| No. 2 | " 4 " | " 2½ to 4 " | 100.00 |
| No. 3 | " 5 " | " 4½ to 8 " | 300.00 |

No. 3 is similar in design to No. 2, except has no handles, but is operated entirely by the ratchet.

| No | 1 | 2 | 3 |
|----------------------------|-------|-------|-------|
| Extra Dies, Each Size..... | 2.50 | 8.00 | 12.00 |
| " " Full Set..... | 10.00 | 32.00 | 60.00 |

THE "LOEW" ADJUSTABLE STOCK AND PIPE DIES

SHOWING EASY SLIDING MOTION
OF CAM-PLATE



B1318

| No. | Style | Threads Inches | Price Each | No. | Style | Threads Inches | Price Each |
|-------|----------|-------------------|------------|-----|----------|-------------------|---------------|
| 0 | R. H. | 1/8 to 1/2 | 9.50 | 2 | R. or L. | 1 1/4 to 2 | 22.50 |
| 1 | R. H. | 1/4 " 1 | 13.25 | 2 | R. or L. | 1 " 2 | 25.00 |
| 1 | R. H. | 1/8 " 1 | 15.00 | 2 | R. or L. | 3/4 " 2 | 28.00 |
| 1 1/2 | R. or L. | 1/2 " 1 1/4 | 17.00 | 3 | R. or L. | 1 1/2 " 3 | 65.00 |

Ratchet Stocks. No. 1 (1/4 to 1 in.), \$23.00. No. 2 (1 1/4 to 2 in.), \$40.00. No. 3 (2 1/2 to 3 in.), \$70.00..

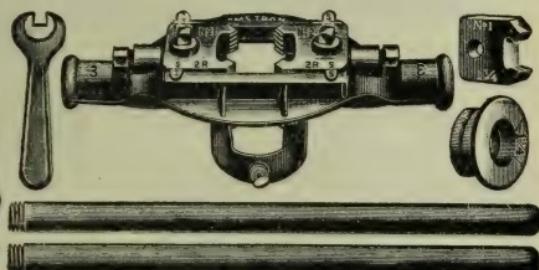
Extra Dies. Each Pipe Size No. 0, \$2.00. No. 1, \$2.50. No. 1 1/2, \$3.50. No. 2, \$4.50. No. 3, \$8.50.

Extra Bushings. Each Pipe Size Nos. 0 and 1, 25c. No. 1 1/2, 40c. Nos. 2 and 3, 50c.

ARMSTRONG'S ADJUSTABLE PIPE STOCKS AND DIES

No. 2

No. 3



B1320

Plates Nos. 1 and 2 are packed in neat hardwood case.

| Number | Dies | Threads Pipe Inch | Price Complete | Stock Only | Dies Per Set Right or Left | Bushings |
|--------|-------|----------------------|-------------------|---------------|-------------------------------|----------|
| 1 | 4 Set | 1/8 to 1/2 | 9.00 | 3.25 | (2 pieces) | 20 |
| 2 | 5 " | 1/4 " 1 | 12.00 | 4.00 | " | 25 |
| 2 1/2 | 4 " | 1/2 " 1 1/4 | 12.00 | 4.50 | " | 40 |
| *3 | *4 " | *1 " 2 | *24.00 | 7.00 | " | 50 |
| 6 | +1 " | 2 1/2 " 3 | 40.00 | 25.00 | " | 100 |
| 7 | +2 " | 2 1/2 " 4 | 60.00 | 30.00 | (4 pieces) | 150 |

Nos. 6 and 7 have 4 handles.

* No. 3, with 3 Set of Dies only, \$20.00. Can furnish 3/4 Dies for No. 3 Stock.

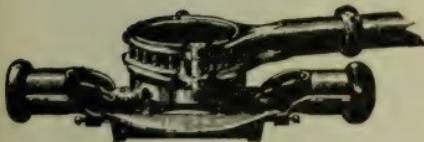
† Nos. 2 1/2, 6, and 7 Dies are double end, cutting two sizes.

‡ Single end, 5/8 inch or 1/4 inch, No. 2 1/2 Dies, \$2.50 each size.

Extra Screws, each: Collar, Thumb, or Adjusting, Nos. 1 and 2, 12c; Nos. 2 1/2 and 3, 15c.

Brass Pipe Sets, No. 2 (5 Set). O. D. 5/8 and 3/4 inch, 20, and 7/8, 1, and 1 1/4 inches, 18 thread. R. H., \$15.00; with Taps, \$26.25.

RATCHET ATTACHMENT For Armstrong Stocks



B1321

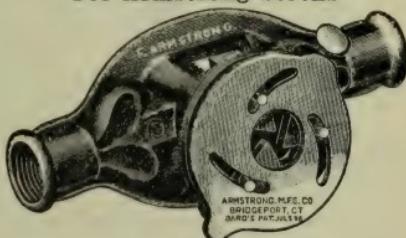
Price, Ratchet Attachment only.
Stock not included.

Fitting Stock Nos. and Price

| No | 2 | 2 1/2 | 3 | 6 | 7 |
|-----------|------|-------|------|------|------|
| Each..... | 2.50 | 3.00 | 3.50 | 5.00 | 5.00 |

For Bolt Stock and Dies
see B1342.

BARD ADJUSTABLE BUSHING For Armstrong Stocks



B1322

Price, Adjustable Bushing only.
Stock not included.

Fitting Stock Nos. and Price

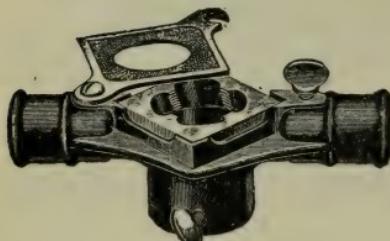
| Number | 1 | 2 | 2 1/2 | 3 |
|--------------|------|------|-------|------|
| Each | 4.50 | 5.00 | 6.00 | 8.00 |

If furnished from factory on stocks instead of bushings, add to Stock No. 1, \$3.00; No. 2, \$3.50; No. 2 1/2, \$4.20; No. 3, \$5.70.

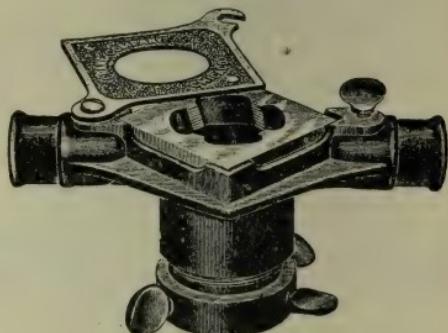
MALLEABLE SCREW PLATES

With Solid Dies

NOS. 1, 1 $\frac{1}{4}$, AND 1 $\frac{3}{4}$
Are Without Leader Screw

NOS. 2 AND 3

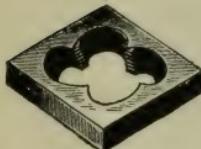
B1323



B1324



DIE



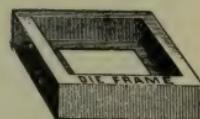
B1325

BUSHINGS



B1326

FRAME



B1327

| Plate Number..... | 1 | 1 $\frac{1}{2}$ | 1 $\frac{3}{4}$ | 2 | 3 |
|--------------------------------|-----------------------------------|------------------------------------|----------------------|----------------------|-----------------------|
| Dies with each Plate..... | 1 $\frac{1}{4}$ to 1 | 3 $\frac{1}{4}$ to 1 $\frac{1}{4}$ | 1 to 1 $\frac{1}{2}$ | 1 $\frac{1}{4}$ to 2 | 2 $\frac{1}{2}$ and 3 |
| Dimensions of Dies..... | 2 $\frac{1}{2}$ x 3 $\frac{3}{4}$ | 3 x 3 $\frac{3}{4}$ | 3 x 3 $\frac{3}{4}$ | 4 x 7 $\frac{1}{8}$ | 5 x 1 $\frac{1}{4}$ |
| Plate, with Dies Complete, ea. | 15.00 | 13.50 | 13.50 | 20.00 | 43.00 |
| " without Dies....." | 5.00 | 6.00 | 6.00 | 9.50 | 25.00 |
| Dies, Right or Left....." | 2.00 | 2.50 | 2.50 | 3.50 | 9.00 |
| Guides....." | .35 | .45 | .45 | .60 | 1.00 |

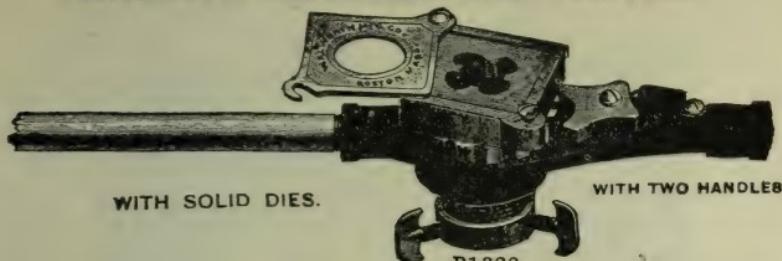
By using a frame, smaller dies can be used in large plates.

The F Plate can be furnished with four handles; add to list \$8.00.

NET PRICE OF PARTS, EACH

| | Caps | Thumb Screws | Leader Screws Only | Screws for Leader | Handles Pair | Die Frame |
|--|------|-----------------|--------------------------|-------------------------|-----------------|--------------|
| No. 1 Plate | .20 | .10 | .... | .... | .70 | .... |
| " 1 $\frac{1}{4}$ or 1 $\frac{1}{2}$ Plate | .30 | .10 | .... | .... | .80 | .20 |
| " 2 Plate..... | .30 | .10 | 1.50 | .10 | 1.00 | .30 |
| " 3 " ..... | .... | .... | 5.50 | .... | .... | .50 |

MILLER'S RATCHET DIE PLATES



WITH SOLID DIES.

WITH TWO HANDLES.

B1328

Nos. C, D, and E with Leader Screw. Nos. A and B are without Leader Screw

| Number.. | A | B | C | D | E |
|---|--------------------------------|-----------------------------------|------------------------|------------------------|-------------------------|
| Dies Furnished with each Stock..... | $\frac{1}{8}$ to $\frac{3}{4}$ | $\frac{1}{4}$ to 1 | 1 to $1\frac{1}{2}$ | $1\frac{1}{4}$ to 2 | $2\frac{1}{2}$ to 3 |
| Dimensions of Dies, Solid..... | $2 \times \frac{1}{2}$ | $2\frac{1}{2} \times \frac{3}{4}$ | $3 \times \frac{3}{4}$ | $4 \times \frac{7}{8}$ | $5 \times 1\frac{1}{4}$ |
| Stock with R. H. Dies Complete..... | 13.00 | 15.00 | 18.50 | 20.00 | 43.00 |
| “ without Dies..... | 7.50 | 7.50 | 13.00 | 13.50 | 29.00 |
| Extra Dies, R. or L. Hand.....each | 1.10 | 1.50 | 1.80 | 2.50 | 7.00 |
| Guides.....“ | .20 | .25 | .35 | .45 | .75 |
| Die Frames.....“ | .... | .22 | .30 | .38 | .45 |
| Space Required Around Pipe to Cut and Thread...inches | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | 5 |

SAUNDERS' COMBINATION DIE STOCKS

With Loose Dies



B1329

No. 0: $\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$, and $\frac{1}{2}$ inch, \$8.00. No. 00: $\frac{1}{8}$, $\frac{3}{8}$, and 1 inch, \$9.00.
Extra Dies, Right or Left, each: No. 0, \$1.00; No. 00, \$1.50.

B1330

NYE
DIES

Pipe Sizes



B1331

NYE SOLID DIES

NYE DIES—For Armstrong Stocks

| Block $4 \times 4 \times \frac{3}{8}$ Price Each | Block $3 \times 3 \times \frac{3}{8}$ Price Each | Block $2\frac{1}{2} \times 2\frac{1}{2} \times \frac{3}{4}$ Price Each | $\frac{1}{4}$ in. to 1 in. for No. 2 Stock, ea. | 4.50 |
|--|--|--|---|------|
| 2 inch, 5.00 | $\frac{1}{2}$ inch, 4.50 | 1 inch, 4.00 | $\frac{3}{4}$ " 3.00 | 5.40 |
| 1 $\frac{1}{2}$ " 5.00 | $\frac{1}{4}$ " 4.00 | $\frac{1}{2}$ " 3.00 | $\frac{1}{2}$ " 2.50 | 6.00 |
| 1 $\frac{1}{4}$ " 4.50 | 1 " 4.00 | $\frac{3}{8}$ " 2.50 | $\frac{1}{2}$ " 2.00 | |
| 1 " 4.50 | $\frac{3}{4}$ " 3.50 | $\frac{1}{4}$ " 2.50 | | |
| $\frac{3}{4}$ " 4.00 | $\frac{1}{2}$ " 3.50 | $\frac{1}{8}$ " 2.00 | | |
| $\frac{1}{2}$ " 4.00 | $\frac{3}{8}$ " 3.00 | | | |
| | $\frac{1}{4}$ " 3.00 | | | |

One man and a Nye Die will do as much work as two men can do with another kind—and with less expenditure of strength.

LITTLE GIANT SCREW PLATES FOR BOLTS

With Adjustable Tap Wrenches



B1335

| Number of Screw Plate | Length of Stock Inches | Diameter of Collet Inches | Size Dies and Taps in Each Set with V Form Threads | Price Each |
|-----------------------|------------------------|---------------------------|--|------------|
| 1 | 14½ | 2 | 1/4, 5/16, 3/8, 7/16, 1/2 | 12.00 |
| 2 | 23 | 2 3/4 | 1/4, 5/16, 3/8, 1/2, 7/16, 1/2, 5/8, 3/4 | 13.50 |
| 3 | 26 | 2 3/4 | 5/8, 3/4, 7/8, 1 | 15.00 |
| 4 | 26 | 2 3/4 | 1/2, 5/8, 3/4, 7/8, 1 | 17.50 |
| 5 | 23 | 2 3/4 | 1/4, 5/16, 3/8, 1/16, 1/2, 5/8, 3/4 | 16.00 |
| 6 | 26 | 2 3/4 | 3/8, 1/16, 7/16, 1/2, 5/8, 3/4, 7/8, 1 | 22.00 |
| 7 | 26 | 2 3/4 | 1/4, 1/16, 5/8, 1/16, 1/2, 5/8, 3/4, 7/8, 1 | 25.50 |
| 8 | { 14½ | 2 | 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 7/8, 1 | 18.00 |
| | 26 | 2 3/4 | 1/2, 5/8, 3/4, 7/8, 1 | |
| 9 | { 14½ | 2 | 1/4, 5/16, 3/8, 1/16, 5/8, 3/4, 7/8, 1 | 27.50 |
| | 29 | 2 3/4 | 1/2, 5/8, 3/4, 7/8, 1 | |
| 20 | 40 | 4 | 5/8, 3/4, 7/8, 1, 1 1/8, 1 1/4 | 35.00 |
| 25 | 52 | 4 1/2 | 7/8, 1, 1 1/8, 1 1/4, 1 1/8, 1 1/2 | 45.00 |
| 30 | 52 | 4 1/2 | 1 1/8, 1 1/4, 1 3/8, 1 1/2 | 37.50 |
| 40 | { 23 | 2 3/4 | 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 7/8, 1 | 40.00 |
| | 40 | 4 | 7/8, 1, 1 1/8, 1 1/4, 1 1/8, 1 1/4 | |
| 50 | { 26 | 2 3/4 | 3/4, 1/16, 5/8, 1/16, 1/2, 5/8, 3/4, 7/8, 1 | 60.00 |
| | 52 | 4 1/2 | 1 1/8, 1 1/4, 1 3/8, 1 1/2 | |

MACHINISTS' SETS "LITTLE GIANT" SCREW PLATES

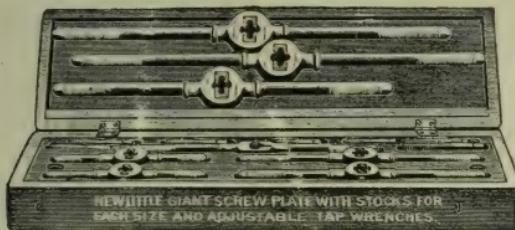
With Taper, Plug and Bottoming Taps,
and Adjustable Tap Wrenches

Put up in neat case just as illustrated B1335, except has full sets of taps, taper, plug and bottoming, for each size. For number of threads to the inch, see B1335.

| | | |
|----------|--|-------|
| No. 101. | Cutting 1/4, 5/16, 3/8, 7/16, 1/2 inch | 15.50 |
| " 102. | " 1/4, 5/16, 1/2, 5/8, 3/4 inch | 18.00 |
| " 103. | " 5/8, 2/4, 7/8, 1 inch | 22.00 |
| " 104. | " 1/2, 5/8, 3/4, 7/8, 1 inch | 25.00 |
| " 105. | " 1/4, 1/16, 5/8, 1/16, 1/2, 5/8, 3/4 inch | 22.00 |
| " 106. | " 5/8, 1/16, 1/2, 5/8, 3/4, 7/8, 1 inch | 31.25 |
| " *107. | " 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 7/8, 1 inch | 36.00 |
| " 108. | " 1/4, 1/16, 5/8, 1/16, 1/2, 5/8, 3/4, 7/8, 1 inch | 24.00 |
| " *109. | " 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 7/8, 1 inch | 38.00 |
| " *140. | " 1/4, 1/16, 5/8, 7/16, 1/2, 5/8, 3/4, 7/8, 1, 1 1/8, 1 1/4 inch | 55.00 |
| " *150. | " 1/4, 1/16, 5/8, 7/16, 1/2, 5/8, 3/4, 7/8, 1, 1 1/8, 1 1/4, 1 3/8, 1 1/2 inch | 84.00 |

*Have two Adjustable Tap Wrenches. Last four have two stocks each.

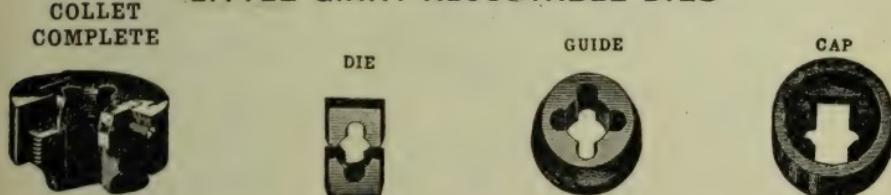
Unless otherwise ordered, V form of thread, exact sizes, will be sent. U.S.S. or Whitworth forms of thread furnished at same prices, if desired; also rough iron sizes, when ordered.

FULL STOCKED SCREW PLATES**A Stock for Each Size****B1337**

Each assortment is put up in a neat wood case.

| Number of Screw Plate | Size Dies and Taps in Each Set | Price Each |
|-----------------------|---|------------|
| 61 | Cuts $\frac{1}{4}$, 20, $\frac{5}{16}$, 18, $\frac{3}{8}$, 16, $\frac{7}{16}$, 14, $\frac{1}{2}$, 12..... | 12.00 |
| 62 | " $\frac{1}{4}$, 20, $\frac{3}{8}$, 16, $\frac{1}{2}$, 12, $\frac{5}{8}$, 11, $\frac{3}{4}$, 10..... | 15.50 |
| 63 | " $\frac{5}{8}$, 11, $\frac{3}{4}$, 10, $\frac{7}{8}$, 9, $1\frac{1}{8}$ | 17.00 |
| 64 | " $\frac{7}{8}$, 12, $\frac{9}{16}$, 11, $\frac{3}{4}$, 10, $\frac{7}{8}$, 9, $1\frac{1}{8}$ | 19.50 |
| 65 | " $\frac{1}{4}$, 20, $\frac{5}{16}$, 18, $\frac{3}{8}$, 16, $\frac{7}{16}$, 14, $\frac{3}{2}$, 12, $\frac{5}{8}$, 11, $\frac{3}{4}$, 10..... | 18.00 |
| 65½ | " $\frac{1}{4}$, 20, $\frac{15}{16}$, 18, $\frac{3}{8}$, 16, $\frac{15}{16}$, 14, $\frac{3}{2}$, 12, $\frac{9}{16}$, 12, $\frac{5}{8}$, 11, $\frac{3}{4}$, 10..... | 20.50 |
| 66 | " $\frac{3}{8}$, 16, $\frac{7}{16}$, 14, $\frac{1}{2}$, 12, $\frac{5}{8}$, 11, $\frac{3}{4}$, 10, $\frac{7}{8}$, 9, $1\frac{1}{8}$ | 24.00 |
| 67 | " $\frac{1}{4}$, 20, $\frac{5}{16}$, 18, $\frac{3}{8}$, 16, $\frac{7}{16}$, 14, $\frac{3}{2}$, 12, $\frac{5}{8}$, 11, $\frac{3}{4}$, 10, $\frac{7}{8}$, 9, $1\frac{1}{8}$ | 29.50 |
| 630 | " $1\frac{1}{8}$, 7, $1\frac{1}{4}$, 7, $1\frac{3}{8}$, 8, $1\frac{1}{2}$, 6..... | 43.50 |
| 640 | " $\frac{1}{4}$, 20, $\frac{5}{16}$, 18, $\frac{3}{8}$, 16, $\frac{7}{16}$, 14, $\frac{1}{2}$, 12, $\frac{5}{8}$, 11, $\frac{3}{4}$, 10, $\frac{7}{8}$, 9, $1\frac{1}{8}$, $1\frac{1}{8}$, 7, $1\frac{1}{4}$, 7..... | 47.00 |
| 650 | " $\frac{1}{4}$, 20, $\frac{5}{16}$, 18, $\frac{3}{8}$, 16, $\frac{15}{16}$, 14, $\frac{3}{2}$, 12, $\frac{5}{8}$, 11, $\frac{3}{4}$, 10, $\frac{7}{8}$, 9, $1\frac{1}{8}$, 7, $1\frac{1}{4}$, 7, $1\frac{1}{8}$, 6, $1\frac{1}{2}$, 6..... | 67.00 |

Separate Dies and Taps, etc., see B1338 and B1395, etc.

Each assortment has adjustable Tap Wrenches for holding Taps.
Sharp V either exact or rough iron sizes furnished at above list.**LITTLE GIANT ADJUSTABLE DIES****B1338****B1339****B1340****B1341**

| Size..... | inches | $\frac{3}{16}$ | $\frac{1}{4}$ | $\frac{5}{16}$ | $\frac{3}{8}$ | $\frac{7}{16}$ | $\frac{1}{2}$ | $\frac{9}{16}$ | $\frac{5}{8}$ | $\frac{11}{16}$ |
|----------------------|--------|----------------|-----------------|----------------|-----------------|----------------|----------------|----------------|----------------|-----------------|
| Threads to inch..... | | 24 | 20 | 18 | 16 | 14 | 12 | 12 | 11 | 11 |
| Die only..... | 1.00 | 1.00 | 1.00 | 1.25 | 1.25 | 1.50 | 1.50 | 1.75 | 1.75 | 1.75 |
| Collet only..... | .50 | .50 | .50 | .50 | .50 | .50 | .50 | .50 | .50 | .50 |
| Size..... | inches | $\frac{3}{4}$ | $\frac{13}{16}$ | $\frac{7}{8}$ | $\frac{15}{16}$ | 1 | $1\frac{1}{8}$ | $1\frac{1}{4}$ | $1\frac{3}{8}$ | $1\frac{1}{2}$ |
| Threads to inch..... | | 10 | 10 | 9 | 9 | 8 | 7 | 7 | 6 | 6 |
| Die only..... | 2.00 | 2.00 | 2.75 | 2.75 | 2.75 | 4.00 | 4.00 | 5.00 | 5.00 | 5.00 |
| Collet only..... | .50 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

Guides 1 inch and less, 20c; $1\frac{1}{8}$ to $1\frac{1}{2}$ inches, 50c.

Left Hand Dies furnished at same price as Right Hand.

For price list of Taps, see B1395, etc.

ARMSTRONG'S STOCK AND DIES FOR BOLTS

For Blacksmiths and Machinists

Nos. 1 and 2 Plates packed in neat Hardwood Case.

| | | |
|---|------|-------|
| No. 1 Stock, 7 Bolt Dies, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{3}{4}$ inch..... | each | 15.00 |
| " 1 " 4 Pipe " and 7 Bolt Dies as above | " | 20.00 |
| " 1 " 7 Bolt " 7 Taps, $\frac{1}{4}$ to $\frac{3}{4}$, as above | " | 23.00 |
| " 1 " 4 Pipe " 7 Bolt Dies and 7 Taps, as above | " | 28.80 |
| " 2 " 7 Bolt " $\frac{1}{2}$, $\frac{3}{8}$, $\frac{5}{16}$, $\frac{3}{4}$, $\frac{1}{2}$, $\frac{1}{1\frac{1}{2}}$ and $1\frac{1}{4}$ inch | " | 20.00 |
| " 2 " 7 " " $\frac{1}{2}$, $\frac{3}{8}$, $\frac{5}{16}$, $\frac{3}{4}$, $\frac{1}{2}$, $\frac{1}{1\frac{1}{2}}$ " $1\frac{1}{4}$ " and Taps | " | 35.00 |
| " 2 " 9 " " $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{3}{4}$, $\frac{5}{8}$ and 1 inch | " | 25.00 |
| " 2 " 9 " " $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{3}{4}$, $\frac{5}{8}$ " 1 " and Taps | " | 42.00 |
| " 2 " 11 " " $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{3}{4}$, $\frac{5}{8}$ and 1, also $1\frac{1}{2}$ and $1\frac{1}{4}$ in | " | 30.00 |
| " 2 " 11 " " $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{3}{4}$, $\frac{5}{8}$ and 1, also $1\frac{1}{2}$ and $1\frac{1}{4}$ " and Taps | " | 50.00 |
| " 3 " 6 " " $\frac{3}{8}$, $\frac{1}{2}$, $1\frac{1}{8}$, $1\frac{1}{4}$, $1\frac{1}{2}$ and $1\frac{1}{4}$ inch | " | 38.00 |
| " 3 " 6 " " $\frac{3}{8}$, $\frac{1}{2}$, $1\frac{1}{8}$, $1\frac{1}{4}$, $1\frac{1}{2}$ " $1\frac{1}{2}$ " and Taps | " | 54.00 |
| " 3 " 9 " " $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{3}{4}$, $\frac{5}{8}$ and $1\frac{1}{2}$ inch | " | 55.00 |
| " 3 " 9 " " $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{16}$, $\frac{1}{2}$, $1\frac{1}{8}$, $1\frac{1}{4}$, $1\frac{1}{2}$ " $1\frac{1}{2}$ " and Taps | " | 59.00 |

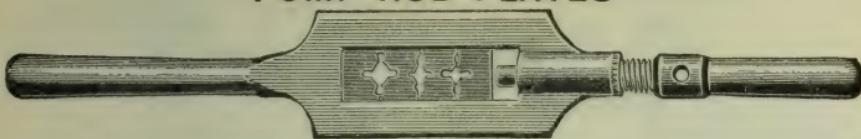
| PARTS | Number | 1 | 2 | 3 |
|---|--------|------|------|-----|
| Stock..... | 3.25 | 4.00 | 7.00 | |
| Bushings..... | .20 | .25 | .50 | |
| Bolt Dies, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$ or $\frac{7}{16}$ inch..... | each | 1.50 | ... | ... |
| " " $\frac{1}{2}$, $\frac{3}{8}$ or $\frac{5}{16}$ inch..... | " | 1.75 | ... | ... |
| " " $\frac{1}{4}$ to 1 inch..... | " | 2.00 | ... | ... |
| " " $1\frac{1}{2}$ and $1\frac{1}{4}$ inch | " | 2.25 | ... | ... |
| " " $\frac{1}{2}$ to $1\frac{1}{2}$ inch | " | 5.00 | ... | ... |

Threads per inch, regularly furnished, are $\frac{1}{4}$ x 20, $\frac{5}{16}$ x 18, $\frac{3}{8}$ x 16, $\frac{7}{16}$ x 14, $\frac{1}{2}$ x 12, $\frac{5}{8}$ x 11, $\frac{3}{4}$ x 10, $\frac{7}{8}$ x 9, 1 x 8, $1\frac{1}{8}$ x 7, $1\frac{1}{4}$ x 7, $1\frac{1}{8}$ x 6, and $1\frac{1}{2}$ x 6.

OSTER SCREW PLATES WITH BOLT DIES

For Blacksmiths and Machinists. With Adjustable Dies and Guides

| In Oak Case. | Black-smiths' | Machinists' |
|--|----------------|---------------|
| $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$ and $\frac{1}{2}$ inch { Dies and 6 Taps.....each | No. { 15.00 | No. { 15.00 |
| { without Taps | 30 { 12.00 | 20 { 12.00 |
| Extra Dies, Right or Left Hand.....per set of 4 pieces | 1.00 | 1.00 |
| $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{3}{4}$ and $\frac{5}{8}$ inch { Dies and 7 Taps.....each | 31 { 20.00 | 21 { 20.00 |
| { without Taps | 16.00 { 16.00 | 16.00 { 16.00 |
| Extra Dies, Right or Left Hand.....per set of 4 pieces | 1.25 | 1.25 |
| $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{3}{4}$, $\frac{5}{8}$ and 1 inch { Dies and 9 Taps.....each | 32 { 30.00 | 22 { 30.00 |
| { without Taps | 23.00 { 23.00 | 23.00 { 23.00 |
| With Taper Plug and Bottoming Taps | 24 | 55.00 |
| Extra Dies, Right or Left Hand.....per set of 4 pieces | 1.50 | 1.50 |
| $\frac{1}{2}$, $\frac{3}{8}$, $\frac{5}{16}$, $\frac{1}{2}$, $\frac{3}{4}$, $\frac{5}{8}$ and $1\frac{1}{2}$ inch { Dies and 9 Taps.each | 33 { 48.00 | 28 { 48.00 |
| { without Taps | 35.00 { 35.00 | 35.00 { 35.00 |
| Extra Dies, Right or Left Hand.....per set of 4 pieces | 1.75 | 1.75 |
| $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$ and $\frac{1}{2}$ inch { Dies and 5 Taps.....each | 34 { 14.00 | 64 { 14.00 |
| { without Taps | 11.00 { 11.00 | 11.00 { 11.00 |
| With Taper Plug and Bottoming Taps | 61 | 20.00 |
| Extra Dies, Right or Left Hand.....per set of 4 pieces | 1.00 | 1.00 |
| $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ and $\frac{3}{4}$ inch { Dies and 5 Taps.....each | 35 { 17.00 | ... |
| { without Taps | 13.00 { 13.00 | ... |
| Extra Dies, Right or Left Hand.....per set of 4 pieces | 1.25 | 1.25 |
| $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$ and 1 inch { Dies and 5 Taps.....each | 36 { 22.00 | 65 { 23.00 |
| { without Taps | 17.00 { 17.00 | 17.00 { 17.00 |
| With Taper Plug and Bottoming Taps | 62 | 45.00 |
| Extra Dies, Right or Left Hand.....per set of 4 pieces | 1.50 | 1.50 |
| $1\frac{1}{2}$, $1\frac{1}{4}$, $1\frac{1}{2}$, $1\frac{3}{4}$ and $1\frac{1}{4}$ inch { Dies and 5 Taps.....each | 37 { 40.00 | 66 { 40.00 |
| { without Taps | 30.00 { 30.00 | 30.00 { 30.00 |
| With Taper Plug and Bottoming Taps | 63 | 65.00 |
| Extra Dies, Right or Left Hand.....per set of 4 pieces | 1.75 | 1.75 |
| $\frac{1}{2}$, $\frac{3}{8}$, $\frac{5}{16}$, $\frac{1}{2}$, $1\frac{1}{8}$, $1\frac{1}{4}$, $1\frac{1}{2}$ and $1\frac{1}{4}$ inch { Dies and 9 Taps.each | 37 1/2 { 48.00 | ... |
| { without Taps | 35.00 { 35.00 | 35.00 { 35.00 |
| Extra Dies, Right and Left Hand.....per set of 4 pieces | 1.75 | 1.75 |

PUMP ROD PLATES

B1345

| | |
|--|------|
| Price, No. 12; 2 pair Dies cutting $\frac{3}{8}$, 14; $\frac{7}{16}$, 12.....each | 3.00 |
| Price, No. 13; 3 pair Dies cutting $\frac{3}{8}$, 14; $\frac{7}{16}$, 12, and $\frac{1}{2}$ in 12.....each | 3.50 |

Extra Dies, Each Size $\frac{3}{8}$, $\frac{7}{16}$ or $\frac{1}{2}$ inch, 75c. per pair.

DERBY PUMP ROD STOCK AND DIE

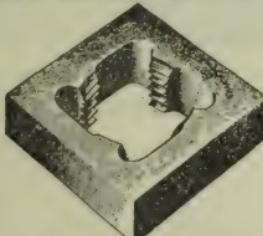
B1346

| | |
|---|------|
| Price, Double Stock with One Die each, $\frac{3}{8}$, 14, and $\frac{7}{16}$, 12 complete.....each | 3.00 |
| Extra Dies and Guide, $\frac{3}{8}$, 14 thread, $\frac{7}{16}$, 12 thread or $\frac{1}{2}$, 12 thread.....each | 1.35 |

BITT BRACE DIE HOLDER AND DIE
For Pump Rods with Guide

B1347

Die Holder 75c., Guide $\frac{3}{8}$ or $\frac{7}{16}$, 20c. each, Die $\frac{3}{8}$, 14 or $\frac{7}{16}$, 12 thread each, 75c.
Dies can be furnished $\frac{3}{8}$, $\frac{1}{4}$ or $\frac{5}{16}$ inch if desired.

SQUARE SOLID BOLT DIES

B1348

Price each Die, cutting one size. State whether even size or our size is wanted.
 $\frac{2\frac{1}{2}}{2\frac{1}{2}}$ inch Sq. x $\frac{1}{2}$ inch thick cutting ($\frac{1}{4}$ in 20 or 18), ($\frac{1}{16}$ in 18 or 16), ($\frac{3}{8}$ in 16 or 14), ($\frac{7}{16}$ in 14), each \$1.80.

$\frac{2\frac{1}{2}}{2\frac{1}{2}}$ inch Sq. x $\frac{3}{4}$ inch thick cutting ($\frac{1}{2}$ in 12 or 13 \$1.80), ($\frac{1}{16}$ in 12 \$1.90), ($\frac{3}{8}$ in 11 or 12 \$2.00).

$\frac{2\frac{1}{2}}{2\frac{1}{2}}$ inch Sq. x $\frac{3}{4}$ inch thick cutting ($\frac{1}{16}$ in 11 \$2.15), ($\frac{3}{4}$ in 10 or 12 \$2.25), ($\frac{13}{16}$ in 10 \$2.30).

$\frac{2\frac{1}{2}}{2\frac{1}{2}}$ inch Sq. x $\frac{3}{4}$ inch thick cutting ($\frac{3}{8}$ in 9 or 12 \$2.40), ($\frac{1}{16}$ in 9 \$2.55).

$\frac{2\frac{1}{2}}{2\frac{1}{2}}$ inch Sq. x 1 inch thick cutting (1 in 8 or 12 \$2.70), (1 $\frac{1}{8}$ in 7 \$3.00), (1 $\frac{1}{4}$ in 7 \$3.30), (1 $\frac{1}{8}$ in 6 \$3.60).

3 inch Sq. x 1 inch thick cutting (1 $\frac{1}{2}$ in 6 \$3.90), (1 $\frac{1}{8}$ in 5 \$4.20).

3 inch Sq. x 1 $\frac{1}{4}$ inch thick cutting (1 $\frac{1}{4}$ in 5 \$5.40).

3 $\frac{1}{2}$ inch Sq. x 1 $\frac{1}{2}$ inch thick cutting (1 $\frac{1}{2}$ in 4 $\frac{1}{2}$ \$6.50).

3 $\frac{1}{2}$ inch Sq. x 2 inch thick cutting (2 in 4 $\frac{1}{2}$ \$7.50).

SAUNDERS ROLLER PIPE CUTTER



B1350

| Number..... | 1 | 2 | 3 | 4 | 5 |
|---------------------------|----------|--------|--------|------------|--------|
| Cuts Pipe .....,inches | 1/8 to 1 | 1 to 2 | 2 to 3 | 2 1/2 to 4 | 4 to 6 |
| Price .....each | 3.00 | 4.50 | 11.00 | 18.00 | 28.00 |
| " Extra Wheels....." | .24 | .32 | .60 | .60 | .60 |
| " " Block and Wheel....." | 1.25 | 1.75 | 2.75 | 3.50 | 4.00 |
| " " Rollers....." | .24 | .32 | .50 | .50 | .60 |
| " " Pins....." | .10 | .10 | .15 | .15 | .15 |

BARNES THREE WHEEL PIPE CUTTER



B1351

| Number.... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-------------------|----------|----------|------------|------------|--------|--------|---------|
| Cuts Pipe .inches | 1/8 to 1 | 1/2 to 2 | 1 1/2 to 3 | 2 1/2 to 4 | 4 to 6 | 6 to 8 | 9 to 12 |
| Price ..each | 4.50 | 6.00 | 10.00 | 20.00 | 30.00 | 40.00 | 50.00 |
| Ex. Wheels " | .25 | .30 | .40 | .50 | .75 | .75 | .75 |
| Ex.Wheel Pins " | .10 | .10 | .10 | .20 | .20 | .25 | .25 |

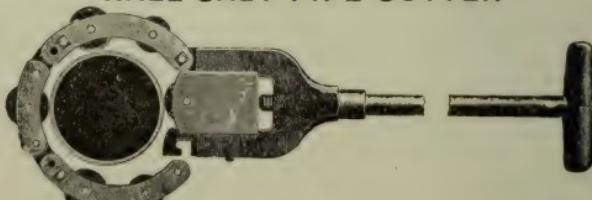
TRIMO COMBINATION PIPE CUTTER



B1352

| Number | 1 | 2 | 3 |
|------------------------|--------------|----------|------------|
| Cuts Pipe .....,inches | 1/8 to 1 1/4 | 1/2 to 2 | 1 1/4 to 3 |
| Price .....each | 4.50 | 6.00 | 10.00 |
| " Extra Wheels....." | .30 | .30 | .40 |
| " " Rolls | .30 | .30 | .40 |

HALL CAST PIPE CUTTER



B1353

No. 1, 4 to 8 inches, \$25.00. No. 2, 10 to 14 inches, \$34.00. No. 3, 16 to 24 inches, \$50.00.

STILLSON PIPE WRENCHES

Small Sizes with Wood Handle



Large Sizes with Steel Handle.



Jaw.



Frame.



Nut.



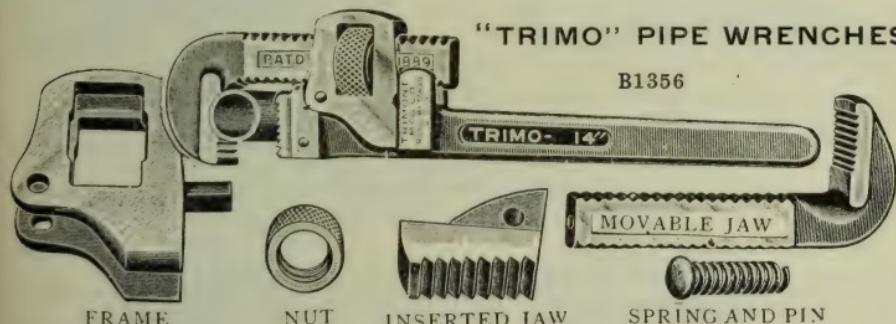
Wood Handle.

B1355

| Pipe Sizes..... | $\frac{1}{8}$ in. to $\frac{1}{2}$ in. | $\frac{1}{8}$ in. to $\frac{3}{4}$ in. | $\frac{1}{8}$ in. to 1 in. | $\frac{1}{4}$ in. to $1\frac{1}{2}$ in. | $\frac{1}{4}$ in. to 2 in. | $\frac{1}{4}$ in. to $2\frac{1}{2}$ in. | $\frac{1}{2}$ in. to $3\frac{1}{2}$ in. | 1 in. to 5 in. |
|--------------------------|--|--|----------------------------------|---|----------------------------------|---|---|----------------------|
| Length, Open..... inches | 6 | 8 | 10 | 14 | 18 | 24 | 36 | 48 |
| Price..... each | 2.00 | 2.00 | 2.25 | 3.00 | 4.00 | 6.00 | 12.00 | 18.00 |
| Extra Jaws..... " | .75 | .75 | .80 | 1.00 | 1.33 | 2.10 | 4.75 | 7.25 |
| " Frames..... " | .35 | .35 | .40 | .50 | .55 | .80 | 1.30 | 1.50 |
| " Nuts..... " | .11 | .11 | .14 | .17 | .22 | .35 | .55 | .95 |
| " Wood Handles... " | .16 | .16 | .18 | .25 | .28 | .... | .... | .... |
| " Steel Handles.... " | .95 | .95 | 1.10 | 1.45 | 2.10 | 3.20 | 6.40 | 9.25 |

"TRIMO" PIPE WRENCHES

B1356



FRAME

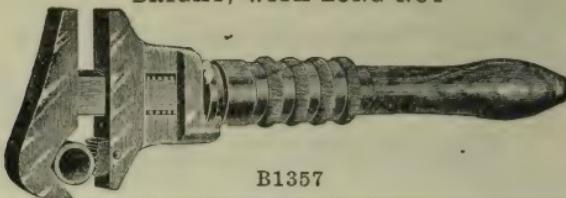
NUT

INSERTED JAW

SPRING AND PIN

| Pipe Sizes..... | $\frac{1}{8}$ in. to $\frac{1}{2}$ in. | $\frac{1}{8}$ in. to $\frac{3}{4}$ in. | $\frac{1}{8}$ in. to 1 in. | $\frac{1}{4}$ in. to $1\frac{1}{2}$ in. | $\frac{1}{4}$ in. to 2 in. | $\frac{1}{4}$ in. to $2\frac{1}{2}$ in. | $\frac{1}{2}$ in. to $3\frac{1}{2}$ in. | 1 in. to 5 in. |
|---------------------------|--|--|----------------------------------|---|----------------------------------|---|---|----------------------|
| Length, Open..... inches | 6 | 8 | 10 | 14 | 18 | 24 | 36 | 48 |
| Price..... each | 2.00 | 2.00 | 2.25 | 3.00 | 4.00 | 6.00 | 12.00 | 18.00 |
| Movable Jaw..... " | .67 | .67 | .75 | 1.00 | 1.33 | 2.00 | 4.00 | 6.00 |
| Nut..... " | .20 | .20 | .27 | .35 | .42 | .50 | .65 | .80 |
| Inserted Jaw..... " | .25 | .25 | .33 | .50 | .55 | .65 | 1.00 | 1.25 |
| Frame..... " | .25 | .25 | .33 | .45 | .55 | .65 | .75 | 1.00 |
| Springs..... " | .03 | .03 | .03 | .03 | .04 | .04 | .04 | .04 |
| Pins (Frame or Jaw).... " | .03 | .03 | .03 | .03 | .04 | .04 | .04 | .04 |

B. & C. COMBINATION WRENCHES
BRIGHT, WITH LONG NUT

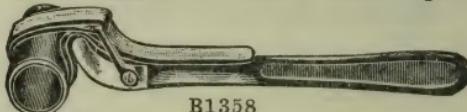


B1357

| | | | | | |
|----------------|----------|--------------------|---------------------------------|--------------------|--------------------|
| Length..... | inches | 10 | 12 | 15 | 18 |
| Pipe Size..... | inches | $\frac{1}{2}$ to 1 | $\frac{1}{2}$ to $1\frac{1}{2}$ | $\frac{1}{2}$ to 2 | $\frac{1}{2}$ to 3 |
| Price..... | per doz. | 25.25 | 28.50 | 40.50 | 72.00 |

Black Wrenches Same List as Bright

BRASS PIPE WRENCH
For Polished or Plated Brass Pipe

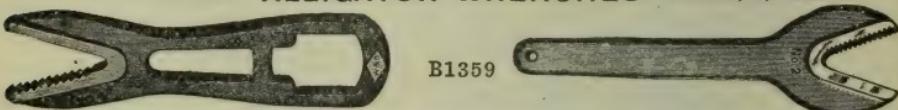


B1358

| | | | | |
|-------------|-----------|---------------------------------------|-----------|------|
| Length..... | 10 inches | Takes Pipe $\frac{1}{8}$ to 2 inches. | Price.... | 1.50 |
|-------------|-----------|---------------------------------------|-----------|------|

Extra Straps, each 50c.

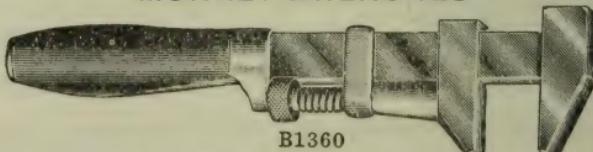
No. 1. ALLIGATOR WRENCHES Nos. 2, 3, AND 4.



B1359

| Size..... | No. 1 | No. 2 | No. 3 | No. 4 | No. 5 |
|-----------------------|--------------------------------|--------------------------------|---------------------------------|----------------------------------|----------------------------------|
| Holds Pipe.....inches | $\frac{1}{8}$ to $\frac{3}{8}$ | $\frac{3}{8}$ to $\frac{3}{4}$ | $\frac{1}{2}$ to $1\frac{1}{4}$ | $1\frac{1}{4}$ to 2 | 2 to 3 |
| Holds Round Iron. " " | $\frac{1}{4}$ to $\frac{3}{4}$ | $\frac{1}{2}$ to 1 | $\frac{3}{4}$ to $1\frac{1}{8}$ | $1\frac{1}{2}$ to $2\frac{1}{2}$ | $2\frac{1}{4}$ to $3\frac{1}{2}$ |
| Length....." | $5\frac{1}{4}$ | 9 | 16 | 22 | 27 |
| Price.....per doz. | 4.00 | 12.00 | 24.00 | 36.00 | 54.00 |

MONKEY WRENCHES



B1360

COE'S KNIFE HANDLE WROUGHT WRENCH

| | | | | | | | |
|----------------------|---------------|----------------|----------------|----------------|----------------|-------|----------------|
| Length.....inches | 6 | 8 | 10 | 12 | 15 | 18 | 21 |
| Will Open.....inches | $\frac{7}{8}$ | $1\frac{1}{4}$ | $1\frac{3}{4}$ | $2\frac{1}{8}$ | $2\frac{5}{8}$ | 3 | $4\frac{1}{8}$ |
| Price.....per doz. | 9.00 | 10.00 | 12.00 | 14.00 | 24.00 | 30.00 | 36.00 |

AGRICULTURAL MALLEABLE BAR WRENCH — B1361

| | | | | | | |
|--------------------|-------|-------|-------|-------|-------|-------|
| Length.....inches | 6 | 8 | 10 | 12 | 15 | 18 |
| Price.....per doz. | 10.00 | 12.00 | 14.00 | 17.00 | 24.00 | 30.00 |

ADJUSTABLE "S" WRENCHES



B1362

| Size | inches | 6 | 8 | 10 | 12 | 14 |
|------------|--------|---------------|-----|----------------|----------------|------|
| Open..... | inches | $\frac{3}{4}$ | 1 | $1\frac{3}{8}$ | $1\frac{5}{8}$ | 2 |
| Price..... | each | .60 | .75 | 1.00 | 1.25 | 1.75 |

DROP FORGED "S" WRENCHES



B1363

Price Unfinished

| Number..... | 344 | 348 | 354 | 359 | 363 | 365 | 366 | 367 |
|-------------|--------|-------------------------------|-------------------------------|------------------------------|------------------------------|--------------------|---------------------|---------------------|
| Sizes..... | inches | $\frac{3}{8} \& \frac{7}{16}$ | $\frac{1}{2} \& \frac{9}{16}$ | $\frac{5}{8} \& \frac{3}{4}$ | $\frac{3}{4} \& \frac{7}{8}$ | $\frac{5}{8} \& 1$ | $1 \& 1\frac{1}{8}$ | $1 \& 1\frac{1}{4}$ |
| Length..... | " | 4 | 5 | 6 | 7 | 8 | 9 | 9 |
| Price..... | each | .10 | .15 | .20 | .25 | .30 | .35 | .35 |

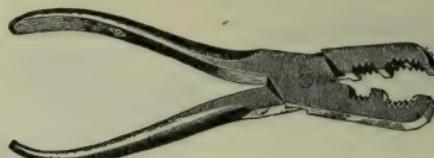
ENGINEERS' WRENCHES, DOUBLE HEAD



B1364

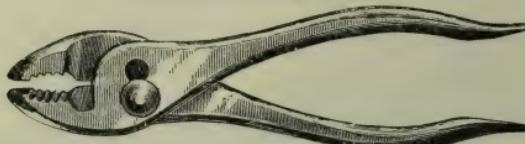
| No. | Bolt Size | Openings Inch | Length Inch | Unfinished Each | No. | Bolt Size | Openings Inch | Length Inch | Unfinished Each |
|-----|----------------------------------|-------------------------------------|-----------------|-----------------|-----|----------------------|------------------------------------|-----------------|-----------------|
| 29 | $\frac{3}{8}$ and $\frac{7}{16}$ | $\frac{11}{16}$ and $\frac{25}{32}$ | $6\frac{7}{8}$ | .25 | 43 | 1 and $1\frac{1}{8}$ | $\frac{5}{8}$ and $1\frac{13}{16}$ | 17 | 1.08 |
| 30 | $\frac{3}{8}$ " | $\frac{1}{2}$ | $7\frac{1}{8}$ | .28 | 44 | $1\frac{1}{4}$ | $\frac{1}{2}$ | 19 | 1.27 |
| 31 | $\frac{7}{8}$ " | $\frac{1}{2}$ | $7\frac{3}{4}$ | .30 | 45 | $1\frac{1}{8}$ | $1\frac{1}{4}$ | 19 | 1.35 |
| 32 | $\frac{7}{8}$ " | $\frac{9}{16}$ | $8\frac{1}{4}$ | .34 | 46 | $1\frac{1}{8}$ | $1\frac{1}{8}$ | 21 | 1.65 |
| 33 | $\frac{1}{2}$ " | $\frac{9}{16}$ | $8\frac{3}{4}$ | .36 | 47 | $1\frac{1}{4}$ | $1\frac{1}{8}$ | 21 | 1.75 |
| 34 | $\frac{1}{2}$ " | $\frac{7}{8}$ | $9\frac{1}{4}$ | .41 | 48 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 23 | 2.10 |
| 35 | $\frac{9}{16}$ " | $\frac{9}{16}$ | $9\frac{3}{4}$ | .43 | 49 | $1\frac{1}{8}$ | $1\frac{1}{2}$ | 23 | 2.25 |
| 96 | $\frac{9}{16}$ " | $\frac{21}{32}$ | $11\frac{1}{4}$ | .50 | 50 | $1\frac{3}{8}$ | $1\frac{5}{8}$ | 25 | 2.65 |
| 37 | $\frac{6}{8}$ " | $\frac{21}{32}$ | $11\frac{1}{2}$ | .53 | 51 | $1\frac{1}{2}$ | $1\frac{5}{8}$ | 25 | 2.85 |
| 38 | $\frac{6}{8}$ " | $\frac{1}{2}$ | $13\frac{1}{2}$ | .62 | 52 | $1\frac{1}{2}$ | $1\frac{3}{4}$ | 27 | 3.30 |
| 39 | $\frac{3}{4}$ " | $\frac{7}{8}$ | $13\frac{1}{2}$ | .65 | 53 | $1\frac{5}{8}$ | $1\frac{3}{4}$ | 27 | 3.55 |
| 40 | $\frac{3}{4}$ " | 1 | $15\frac{1}{2}$ | .78 | 54 | $1\frac{3}{8}$ | 2 | $30\frac{1}{2}$ | 4.15 |
| 41 | $\frac{3}{4}$ " | 1 | $15\frac{1}{2}$ | .82 | 55 | $1\frac{1}{4}$ | 2 | $30\frac{1}{2}$ | 4.55 |
| 42 | $\frac{7}{8}$ " | $1\frac{1}{8}$ | 17 | 1.00 | 55 | $1\frac{7}{8}$ | 2 | $30\frac{1}{2}$ | 4.55 |

Unfinished Wrenches have milled openings.

GAS PLIERS

B1366

| | | | | | | | |
|---------------|-----------|------|------|------|-------|-------|-------|
| Length..... | inches | 7 | 8 | 9 | 10 | 12 | 14 |
| Polished..... | per dozen | 7.40 | 8.25 | 9.25 | 10.70 | 13.00 | 17.00 |

COMBINATION PLIERS

B1367

| | | | | |
|--------------------|-----------|-------|-------|-------|
| Length..... | inches | 6 | 8 | 10 |
| Nickel Plated..... | per dozen | 15.00 | 18.00 | 21.00 |

COMBINATION PLIERS AND WIRE CUTTERS

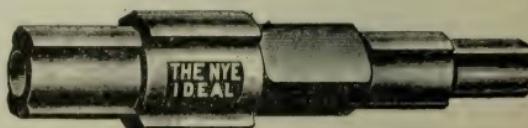
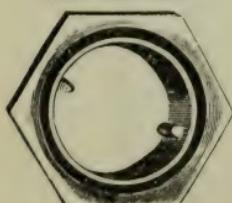
B1368

| | | | | | | |
|--------------------|-----------|-------|-------|-------|-------|-------|
| Length..... | inches | 4½ | 6 | 8 | 10 | 12 |
| Will Cut Wire..... | number | 14 | 11 | 8 | 6 | 5 |
| Price..... | per dozen | 10.00 | 12.00 | 15.00 | 20.00 | 30.00 |

IDEAL RADIATOR VALVE UNION NIPPLE WRENCH

THE NIPPLE

THE WRENCH



B1369

Wrenches, catching 1, 1½, 2 inch.....each | 1.50

TRIMO CHAIN PIPE TONGS

With Flat Link Chain

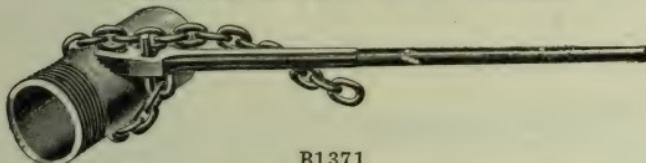


B1370

| Sizes | No. 10 | No. 11 | No. 12 | No. 13 | No. 14 | No. 15 | No. 16 |
|----------------------------|--------|--------|--------|--------|--------|----------|---------|
| With Flat Link Chain..each | 2.50 | 3.50 | 5.00 | 7.00 | 9.00 | 11.00 | 18.00 |
| " Cable Chain " | 2.25 | 3.25 | 4.50 | 6.25 | 7.70 | 9.50 | 16.00 |
| Sizes Pipe.....inches | ½ to 1 | ⅓ to 2 | ¼ to 3 | ⅔ to 6 | 1 to 8 | 1½ to 10 | 2 to 12 |
| Length | 13¾ | 20 | 27 | 37 | 45 | 54 | 65 |
| Weight | lbs. | 1 ½ | 5 | 9 | 18 | 27 | 49 |
| Extra Chains | each | .75 | 1.00 | 1.50 | 2.50 | 3.25 | 4.00 |
| " Jaws | pair | 1.00 | 1.75 | 2.75 | 4.00 | 4.75 | 5.50 |
| " Bolt and Nut | each | .20 | .20 | .20 | .25 | .25 | .30 |

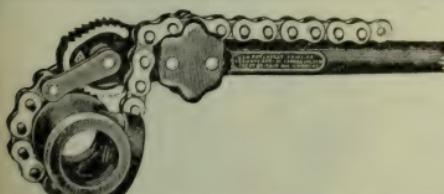
PRICE LIST VULCAN FLAT LINK CHAIN TONGS

| Number | 10 | 11 | 12 | 13 | 13½ | 14 | 15 | 16 |
|----------------------------|--------|---------|---------|--------|--------|---------|---------|---------|
| Length .....inches | 13¾ | 20 | 27 | 37 | 44½ | 50½ | 64½ | 87 |
| Takes Pipe | ½ to ¾ | ⅓ to 1½ | ¼ to 2½ | ⅔ to 4 | 1 to 6 | 1½ to 8 | 2 to 12 | 4 to 18 |
| With Flank Link Chain, ea. | 2.50 | 3.50 | 5.00 | 7.00 | 9.00 | 11.00 | 18.00 | 40.00 |

ROBBINS CHAIN PIPE TONGS

B1371

| Number | 2 | 3 | 4 | 5 | 6 | 7 |
|-------------------------|--------|----------|--------|----------|---------|---------|
| Length of Lever....feet | 2 ¾ | 3 | 4 | 5 | 6 | 7 |
| Price | each | 5.50 | 6.25 | 9.00 | 12.50 | 16.00 |
| Takes Pipe.....inches | 1 to 2 | 1 ¼ to 4 | 2 to 6 | 2 ½ to 8 | 4 to 10 | 4 to 16 |
| Diam. of Chain (Link) " | ½ | ½ | ¾ | ¾ | ½ | ¾ |
| Average Weight..pounds | 7 | 12 | 24 | 33 | 50 | 115 |

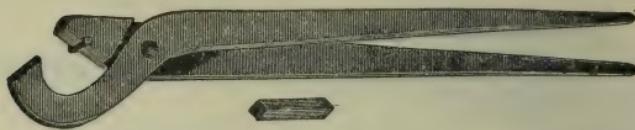
**"AGRIPPA"**
FITTINGS WRENCH

B1372

| Size.....number | 20 | 21 | 22 | 23 | 23½ | 24 | 25 |
|-----------------------------|--------|---------|---------|--------|--------|----------|---------|
| Price | each | 2.50 | 3.50 | 5.00 | 7.00 | 9.00 | 11.00 |
| Capacity, Fittings...inches | ½ to ¾ | ⅓ to 1½ | ¼ to 2½ | ⅔ to 4 | 1 to 6 | 1 ½ to 8 | 2 to 12 |
| Length Over All....." | 13¾ | 20 | 27 | 37 | 44½ | 50½ | 64½ |
| Extra Jaws.....each | 1.00 | 1.75 | 2.75 | 4.00 | 4.75 | 5.50 | 7.50 |
| Extra Chains....." | 1.00 | 1.25 | 1.75 | 2.75 | 3.75 | 4.50 | 6.75 |

LAY PIPE TONGS

With Adjustable Bits



B1373

| Pipe Size.....inches | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 3 1/2 | 4 |
|---|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Regular.....each | 4.00 | 4.25 | 4.50 | 5.00 | 5.50 | 6.00 | 7.50 | 9.00 |
| Extra Heavy Long Handles... " " Bits.....per doz. | 5.00 2.50 | 5.50 2.50 | 5.75 2.50 | 6.00 2.50 | 6.75 2.50 | 8.75 3.50 | 9.00 3.50 | 9.75 3.50 |
| Pipe Size.....inches | 4 1/2 | 5 | 5 5/8 | 6 | 7 5/8 | 8 | 10 | 12 |
| Regular.....each | 10.00 | 10.50 | 12.00 | 13.00 | 25.00 | 25.00 | 27.50 | 32.00 |
| Extra Heavy Long Handles... " " Bits.....per doz. | 14.00 3.50 | 14.00 3.50 | 16.00 3.50 | 16.00 3.50 | 29.00 5.00 | 29.00 5.00 | 33.00 5.00 | 40.00 5.00 |

Extra Heavy Short Handle Tongs or Steel Lined Tongs—quoted on application.

CRUMBIE PIPE TONGS



B1374

| Size inches | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 3 1/2 |
|--------------------|------|------|-------|-------|------|-------|------|-------|
| Tongs.....each | 2.25 | 2.50 | 3.25 | 3.50 | 4.50 | 5.00 | 8.25 | 9.00 |
| Small Jaw..... " " | .75 | .75 | .90 | 1.00 | 1.25 | 1.25 | 1.50 | 1.50 |
| Large Jaw..... " " | 1.00 | 1.00 | 1.10 | 1.25 | 1.50 | 1.50 | 2.00 | 2.00 |

BROWN'S ADJUSTABLE PIPE TONGS

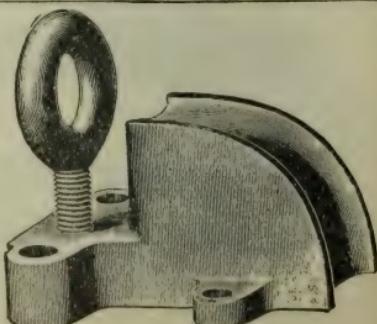


B1375

| Number..... | 1 | 1 1/2 | 2 | 3 | 4 | 5 | 6 | 7 |
|--------------------|------------|----------|--------------|--------|------------|------------|--------|--------|
| Takes Pipe. inches | 1/8 to 3/4 | 3/8 to 1 | 1/2 to 1 1/4 | 1 to 2 | 1 1/2 to 3 | 2 1/2 to 4 | 3 to 5 | 4 to 7 |
| Price.....each | .60 | .75 | .85 | 1.20 | 2.70 | 6.00 | 10.00 | 11.00 |

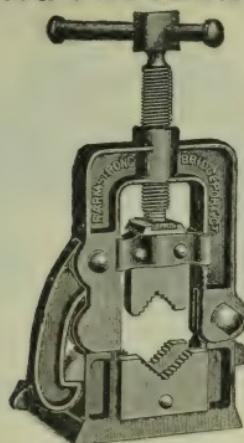
PIPE BENDING FORM

| | |
|--|------|
| No. 1 takes 1/8 to 1 1/4 in. (11 lbs)....ea. | 3.50 |
| No. 2 " 1 to 2 " (21 lbs)..." " | 4.50 |



B1376

ARMSTRONG PATTERN PIPE VISE

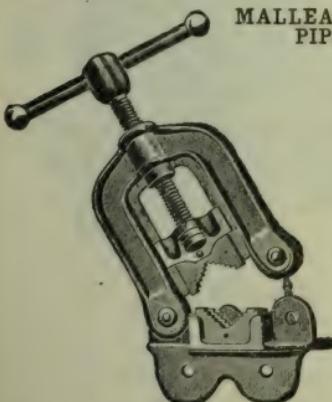


B1380

| Number | 1 | 2 | 3 |
|-------------------|--------------|--------------|--------|
| Holds Pipe..... | 1/8 to 2 1/2 | 1/2 to 4 1/2 | 1 to 6 |
| Price..... each | 10.00 | 20.00 | 30.00 |
| Upper Jaws..... " | .50 | .75 | 2.00 |
| Lower "..... pair | 1.00 | 1.50 | 4.00 |

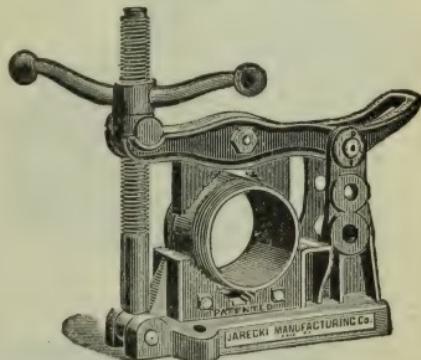
BRASS PIPE JAWS FOR No. 1 ARMSTRONG VISE

| | | |
|---|----------------|------|
| 5/8, 3/4 or 7/8 Outside Diameter { | each Size, Set | .75 |
| 1 1/8, 1 1/4 " 3/8 I. P. Size { | " " " | 1.00 |
| 1, 1 1/8 " 1 1/4 Outside Diameter | " " " | 1.25 |
| 1 1/8, 1 1/2 or 1 5/8 " " { | " " " | 1.50 |
| 1/2, 3/4 or 1 I. P. Size..... { | " " " | 1.75 |
| 1 1/8, 1 1/2 or 2 Outside Diameter..... | " " " | |
| 2 1/8, 2 1/4 " 2 3/8 " " { | " " " | |
| 1 1/4, 1 1/2 " 2 1/2 I. P. Size..... { | " " " | |

MALLEABLE HINGE
PIPE VISE

B1381

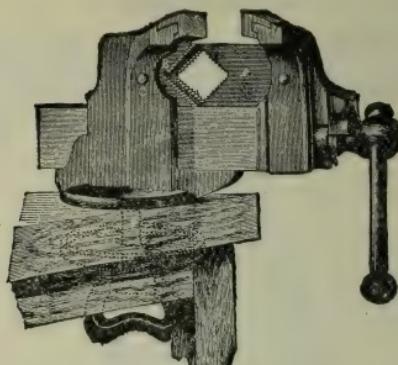
JARECKI PIPE VISE



B1382

| | | | |
|------------------------------|-------|-----------------------------------|-------|
| No. 1. Pipe 1/8 to 2 in..... | 10.00 | No. 1A. 1/8 to 2 in. Pipe..... | 12.00 |
| " 2. " 3/8 " 3 " | 14.00 | No. 2A. 1/8 " 4 " " | 16.00 |
| | | No. 3A. 1 1/2 to 6 in. Pipe | 24.00 |
| | | No. 4A. 6 to 12 " " | 60.00 |

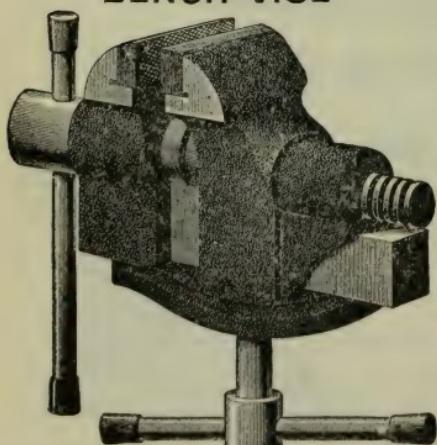
COMBINATION PIPE VISE



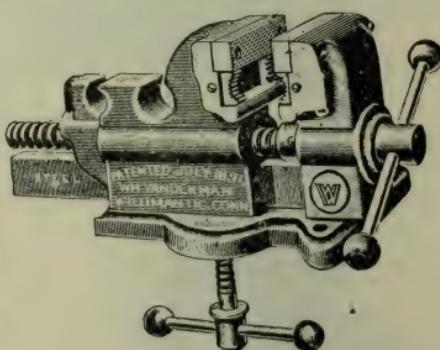
B1384

| Number | 1 | 2 | 3 |
|--|----------|----------|----------|
| Holds Pipe..... inches | 1/8 to 2 | 1/4 to 3 | 1/4 to 4 |
| Price each | 16.00 | 20.00 | 28.00 |
| Parallel Jaws | .50 | .50 | .50 |
| Back Jaw with Parallel Jaw | 3.00 | 3.75 | 4.25 |
| Front or Sliding Jaw with Parallel Jaw | 3.00 | 3.75 | 4.25 |
| Short V Pipe Jaw Double | 1.25 | 1.75 | 2.25 |
| Long V " Single | .75 | 1.00 | 1.25 |
| Screw Nut Handle and Collar | 1.75 | 2.00 | 2.25 |
| Nuts | .25 | .35 | .45 |

Collar for Screw, 10c each; Small Washers, 10c each; Bench Bolts, 15c each;
Large Washers, Swivel, 20c each; Hand Nuts, 25c each.

HEAVY
BENCH VISE

B1385

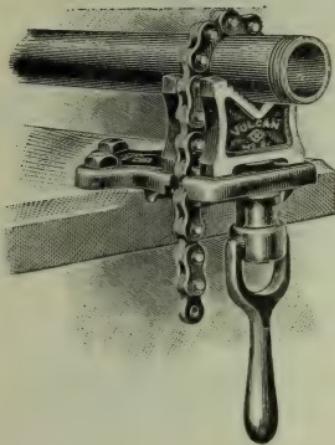
VANDERMAN
COMBINATION VISE

B1386

| | |
|--|-------|
| No. 1 Holds Pipe 1/8 to 4 inches | 18.00 |
| Extra Jaws per pair | 1.75 |
| Jaw Screws, net each | .05 |

| | |
|-------------------------------------|-------|
| No. 0, Pipe 1/8 to 2 1/2 inch | 15.00 |
| No. 1 " 1/8 to 7 " | 20.00 |
| No. 3 " 1/8 to 10 " | 30.00 |

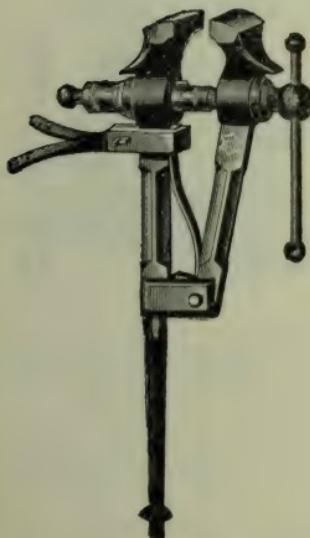
Has Pipe-bending Form. No. 0, up to 1 inch; No. 1, up to 1 1/2 inch; No. 3, up to 2 inch.

**VULCAN CHAIN PIPE VISE****B1388**

Holds pipe $\frac{1}{2}$ inch to $2\frac{1}{2}$ inch. For Bolts, Bars, Shafts, etc.

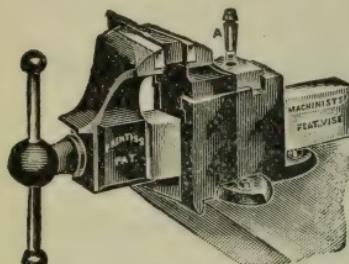
| | |
|-------------------|-------------|
| Price, No. 2..... | each \| 5.00 |
|-------------------|-------------|

Jaws, \$2.25 per chain, \$1.25 each.
Weight 10 lbs.

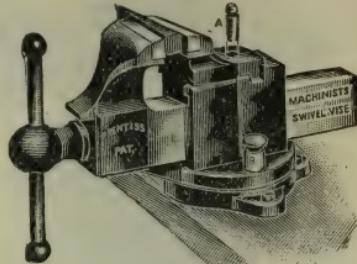
**SOLID BOX VISES****B1388^{1/2}**

| No. | APPROX. WEIGHT POUNDS | WIDTH OF JAW INCHES | PRICE EACH |
|-----|-----------------------------|---------------------------|---------------|
| 25 | 25 | 3 $\frac{1}{4}$ | 12.00 |
| 30 | 30 | 3 $\frac{3}{8}$ | 11.00 |
| 35 | 35 | 3 $\frac{3}{4}$ | 10.00 |
| 40 | 40 | 4 | 10.50 |
| 45 | 45 | 4 $\frac{1}{4}$ | 11.00 |
| 50 | 50 | 4 $\frac{1}{2}$ | 11.50 |
| 55 | 55 | 4 $\frac{3}{4}$ | 12.00 |
| 60 | 60 | 5 | 13.00 |
| 65 | 65 | 5 | 14.00 |
| 70 | 70 | 5 $\frac{1}{4}$ | 15.00 |
| 75 | 75 | 5 $\frac{1}{4}$ | 16.00 |
| 80 | 80 | 5 $\frac{1}{2}$ | 17.50 |
| 85 | 85 | 5 $\frac{1}{2}$ | 18.50 |
| 90 | 90 | 5 $\frac{3}{4}$ | 20.00 |
| 95 | 95 | 5 $\frac{3}{4}$ | 21.00 |
| 100 | 100 | 6 | 22.00 |
| 110 | 110 | 6 | 24.00 |
| 120 | 120 | 6 $\frac{1}{4}$ | 26.00 |

Larger sizes quoted on application.

VISES**MACHINISTS' SELF ADJUSTING JAW VISES****STATIONARY BOTTOM****SWIVEL BOTTOM**

B1389

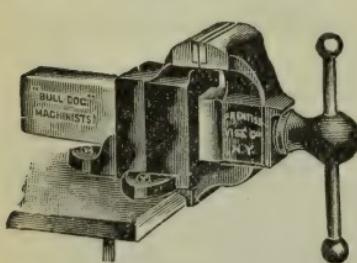
STATIONARY BOTTOM

B1390

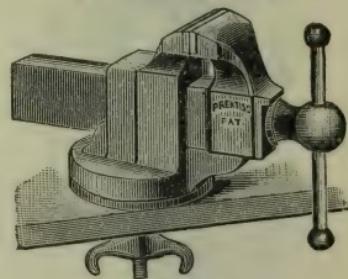
| Number..... | 1 | 2 | 2½ | 3 | 4 | 5 | 6 |
|-------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-------|-------|
| Width of Jaw.....inches | 2 $\frac{5}{8}$ | 3 $\frac{1}{2}$ | 4 | 4 $\frac{1}{2}$ | 5 $\frac{1}{4}$ | 6 | 7 |
| Opens....." | 3 $\frac{1}{2}$ | 4 $\frac{3}{4}$ | 5 $\frac{1}{4}$ | 6 | 8 | 9 | 11 |
| Weight.....pounds | 13 $\frac{1}{2}$ | 28 | 41 | 54 | 96 | 146 | 184 |
| Price.....each | 5.50 | 7.00 | 9.00 | 10.50 | 17.00 | 24.00 | 30.00 |

SWIVEL BOTTOM

| Number..... | 18 | 19 | 19½ | 20 | 21 | 22 | 23 |
|-------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------|-------|
| Width of Jaw.....inches | 2 $\frac{5}{8}$ | 3 $\frac{1}{2}$ | 4 | 4 $\frac{1}{2}$ | 5 $\frac{1}{4}$ | 6 | 7 |
| Opens....." | 3 $\frac{1}{2}$ | 4 $\frac{3}{4}$ | 5 $\frac{1}{4}$ | 6 | 8 | 9 | 11 |
| Weight.....pounds | 17 | 32 | 46 | 65 | 109 | 168 | 207 |
| Price.....each | 6.75 | 8.50 | 10.50 | 12.50 | 19.00 | 27.00 | 35.00 |

MACHINISTS' SOLID JAW "BULL DOG" VISES**STATIONARY BOTTOM****SWIVEL BOTTOM**

B1391

STATIONARY BOTTOM

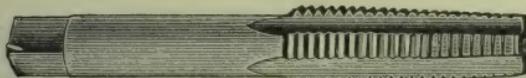
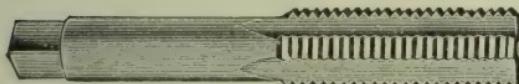
B1392

| Number..... | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 |
|-------------------------|-----------------|-----------------|-----------------|-----------------|-------|-----------------|-------|-------|
| Width of Jaw.....inches | 3 $\frac{1}{4}$ | 3 $\frac{5}{8}$ | 4 $\frac{1}{8}$ | 4 $\frac{5}{8}$ | 5 | 5 $\frac{1}{2}$ | 6 | 7 |
| Opens....." | 4 | 5 $\frac{1}{2}$ | 6 | 7 | 8 | 9 | 10 | 12 |
| Weight.....pounds | 22 | 28 | 42 | 52 | 72 | 100 | 135 | 210 |
| Price.....each | 6.00 | 7.00 | 8.50 | 10.00 | 13.00 | 18.50 | 25.00 | 37.50 |

SWIVEL BOTTOM

| Number..... | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 |
|-------------------------|-----------------|-----------------|-----------------|-----------------|-------|-----------------|-------|-------|
| Width of Jaw.....inches | 5 $\frac{1}{4}$ | 3 $\frac{5}{8}$ | 4 $\frac{1}{8}$ | 4 $\frac{5}{8}$ | 5 | 5 $\frac{1}{2}$ | 6 | 7 |
| Opens....." | 4 | 5 $\frac{1}{2}$ | 6 | 7 | 8 | 9 | 10 | 12 |
| Weight.....pounds | 28 | 36 | 52 | 64 | 85 | 115 | 155 | 235 |
| Price.....each | 7.50 | 8.75 | 10.50 | 12.50 | 16.00 | 22.00 | 30.00 | 42.50 |

MACHINIST HAND TAPS

TAPER
B1395PLUG
B1396BOTTOMING
B1397

MACHINE OR NUT TAP—B1398



| Diameter Inches | Standard V Threads | Use Drill Diam. | NUMBER OF THREADS TO INCH | | HAND TAPS | | Machine Tap Each |
|--------------------|--------------------------|-----------------------|-------------------------------|---------------|------------------|-------|------------------------|
| | | | Can also Furnish Hand Taps | Price Each | Price Per Set | | |
| 3/8 | 24 | No. 29 | 30, 32, 36, | .35 | 1.05 | .... |  |
| 1/4 | 20 | No. 14 | 2 1/2, 27, 32, | .45 | 1.35 | .60 | |
| 5/16 | 18 | 15 1/64 | 20, 24, 27, 32, | .50 | 1.50 | .70 | |
| 3/8 | 16 | L | 14, 18, 20, 24, 27, | .55 | 1.65 | .80 | |
| 7/16 | 14 | R | 12, 16, 20, 24, 27, | .60 | 1.80 | .90 | |
| 1/2 | 12 | 25 1/64 | 13, 14, 16, 20, 24, 27, | .70 | 2.10 | 1.00 | |
| 9/16 | 12 | 29 1/64 | 14, 27, | .80 | 2.40 | 1.15 | |
| 5/8 | 11 | 1/2 | 10, 12, 20, 24, 27, | .90 | 2.70 | 1.30 | |
| 11/16 | 11 | ..... | 10, 12, | 1.05 | 3.15 | 1.45 | |
| 3/4 | 10 | 39 1/64 | 12, 20, 27, | 1.20 | 3.60 | 1.60 | |
| 13/16 | 10 | 43 1/64 | 12, | 1.40 | 4.20 | 1.80 | |
| 7/8 | 9 | 23 1/32 | 10, 12, 27, | 1.60 | 4.80 | 2.10 | |
| 11/8 | 9 | 25 1/32 | 12, | 1.80 | 5.40 | 2.40 | |
| 1 | 8 | 53 1/64 | 12, 27, | 2.00 | 6.00 | 2.80 | |
| 1 1/16 | 8 | 57 1/64 | 8, | 2.15 | 6.45 | .... |  |
| 1 1/8 | 7 | 59 1/64 | 8, 12, | 2.25 | 6.75 | 3.20 | |
| 1 1/16 | 7 | 63 1/64 | ..... | 2.45 | 7.35 | .... |  |
| 1 3/4 | 7 | 13 1/64 | 12. | 2.60 | 7.80 | 3.70 | |
| 1 1/8 | 7 | 17 1/64 | ..... | 2.80 | 8.40 | .... |  |
| 1 3/8 | 6 | 1 1/8 | ..... | 3.00 | 9.00 | 4.20 | |
| 1 7/16 | 6 | 1 3/4 0 | ..... | 3.25 | 9.75 | .... |  |
| 1 1/2 | 6 | 1 17/64 | ..... | 3.50 | 10.50 | 4.70 | |
| 1 5/8 | 5 | 12 1/64 | ..... | 4.20 | 12.60 | 5.30 | |
| 1 3/4 | 5 | 129 1/64 | ..... | 5.00 | 15.00 | 6.00 | |
| 1 7/8 | 4 1/2 | 135 1/64 | ..... | 5.80 | 17.40 | 6.80 | |
| 2 | 4 1/2 | 143 1/64 | ..... | 6.70 | 20.10 | 7.70 | |
| 2 1/8 | 4 1/2 | ..... | ..... | 8.00 | 24.00 | 9.00 | |
| 2 1/4 | 4 1/2 | ..... | ..... | 9.20 | 27.60 | 10.20 | |
| 2 5/8 | 4 1/2 | ..... | ..... | 10.50 | 31.50 | 11.50 | |
| 2 1/2 | 4 | ..... | ..... | 11.50 | 34.50 | 12.50 | |
| 2 3/8 | 4 | ..... | ..... | 13.00 | 39.00 | 14.00 | |
| 2 1/4 | 4 | ..... | ..... | 14.00 | 42.00 | 15.00 | |
| 2 7/8 | 4 | ..... | ..... | 15.50 | 46.50 | 16.50 | |
| 3 | 3 1/2 | ..... | ..... | 17.00 | 51.00 | 18.00 | |
| 3 1/8 | 3 1/2 | ..... | ..... | 18.75 | 56.25 | 19.75 | |

Hand Taps, with left hand threads of standard size and pitch, $\frac{1}{4}$ to 2 inches diameter, furnished at regular prices.

PIPE TAPS AND REAMERS

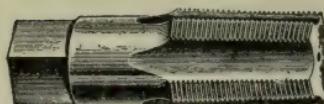


Fig. B1400



Fig. B1401

| Pipe size..in. | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|--------------------|---------------|---------------|---------------|---------------|---------------|-----------------|-----------------|-----------------|-----------------|----------------|-------|
| Threads per inch.. | 27 | 18 | 18 | 14 | 14 | $11\frac{1}{2}$ | $11\frac{1}{2}$ | $11\frac{1}{2}$ | $11\frac{1}{2}$ | 8 | 8 |
| Price....each | 1.12 | 1.25 | 1.50 | 1.87 | 2.50 | 3.12 | 3.75 | 4.62 | 6.25 | 10.50 | 15.00 |

DRILL SIZES FOR PIPE TAPS

| Diameter of Tap Inches | Diameter of Drill Inches | Diameter of Tap Inches | Diameter of Drill Inches | Diameter of Tap Inches | Diameter of Drill Inches |
|------------------------|--------------------------|------------------------|--------------------------|------------------------|--------------------------|
| $\frac{1}{8}$ | $\frac{21}{64}$ | $\frac{3}{4}$ | $1\frac{15}{16}$ | 2 | $2\frac{3}{16}$ |
| $\frac{1}{4}$ | $\frac{29}{64}$ | 1 | $1\frac{13}{16}$ | $2\frac{1}{2}$ | $2\frac{11}{16}$ |
| $\frac{3}{8}$ | $\frac{39}{64}$ | $1\frac{1}{4}$ | $1\frac{13}{32}$ | 3 | $3\frac{5}{16}$ |
| $\frac{1}{2}$ | $\frac{55}{64}$ | $1\frac{1}{2}$ | $1\frac{23}{32}$ | | |

COMBINED DRILL, REAMER AND TAP

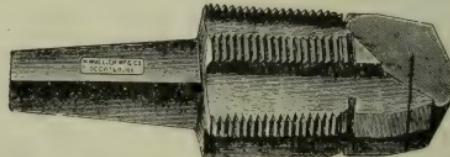


Fig. B1402

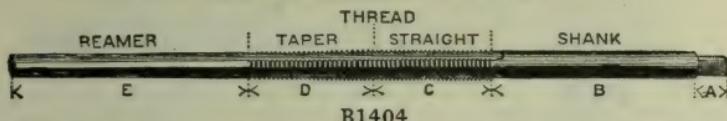
| Diameter.....inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|---------------------|---------------|---------------|------|----------------|----------------|-------|
| Price.....each | 4.95 | 5.45 | 6.30 | 7.70 | 9.00 | 11.80 |

BOILER PATCH BOLT TAP



Fig. B1403

| Diameter.....inches | $\frac{1}{2}$ | $\frac{9}{16}$ | $\frac{5}{8}$ | $\frac{11}{16}$ | $\frac{3}{4}$ | $\frac{13}{16}$ | $\frac{7}{8}$ |
|-----------------------------|-----------------|----------------|-----------------|-----------------|-----------------|-----------------|---------------|
| Number threads to inch..... | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Price.....each | .70 | .80 | .90 | 1.05 | 1.20 | 1.40 | 1.60 |
| Diameter.....inches | $\frac{15}{16}$ | 1 | $1\frac{1}{16}$ | $1\frac{1}{8}$ | $1\frac{3}{16}$ | $1\frac{1}{4}$ | ... |
| Number threads to inch..... | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Price.....each | 1.80 | 2.00 | 2.15 | 2.25 | 2.45 | 2.60 | ... |

STAY-BOLT TAPS

LENGTH, INCHES. PRICE EACH

| Diameter Inches | 12 | 14 | 16 | 18 | 21 | 24 | 27 | 30 | 33 | 36 | 39 | 42 |
|---|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| $\frac{3}{4}$, $\frac{13}{16}$, $\frac{7}{8}$ | 4.50 | 5.00 | 5.60 | 7.20 | 8.00 | 8.80 | 10.90 | 13.00 | 14.00 | 15.00 | 16.50 | 18.00 |
| $\frac{15}{16}$, 1 | | | 6.60 | 8.50 | 9.35 | 10.20 | 12.25 | 14.25 | 15.40 | 16.50 | 18.15 | 19.75 |
| $1\frac{1}{16}$, $1\frac{1}{8}$ | | | 7.60 | 9.50 | 10.35 | 11.20 | 13.25 | 15.25 | 16.40 | 17.50 | 20.00 | 22.00 |
| $1\frac{3}{16}$, $1\frac{1}{4}$ | | | 9.00 | 10.50 | 12.00 | 12.75 | 14.75 | 16.50 | 18.00 | 19.50 | 22.00 | 24.00 |
| $1\frac{5}{16}$, $1\frac{3}{8}$ | | | 11.00 | 12.50 | 14.00 | 15.00 | 17.00 | 18.50 | 20.00 | 21.50 | 24.00 | 26.00 |
| $1\frac{7}{16}$, $1\frac{1}{2}$ | | | 13.00 | 14.50 | 16.00 | 17.00 | 19.00 | 20.00 | 22.00 | 23.50 | 26.00 | 28.00 |

Longer Taps quoted on application.

In Ordering Stay-Bolt Taps state diameter and number of threads to the inch; also length of parts, A, B, C, D and E; also size of square head.

Generally Stay-Bolt Taps are wanted with 12 thread to the inch.

LIGHTNING TAPER REAMERS FOR BRACE

B1405

| Size...in. | $\frac{1}{4}$ | $\frac{5}{16}$ | $\frac{3}{8}$ | $\frac{7}{16}$ | $\frac{1}{2}$ | $\frac{9}{16}$ | $\frac{5}{8}$ | $\frac{11}{16}$ | $\frac{3}{4}$ | $\frac{13}{16}$ | $\frac{7}{8}$ | $\frac{15}{16}$ | 1 | $1\frac{1}{16}$ |
|-------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|------|-----------------|
| Price ..ea. | .45 | .50 | .55 | .60 | .70 | .80 | .90 | 1.05 | 1.20 | 1.40 | 1.60 | 1.80 | 2.00 | 2.25 |

| | |
|--|------|
| Per Set, in Case No. 1, 9 sizes. $\frac{1}{4}$ inch to $\frac{3}{4}$ inch..... | 7.25 |
| " " " " " 2.5 " $\frac{1}{4}$ " " $\frac{1}{2}$ " " | 3.00 |

BURRING REAMERS WITH BIT BRACE SHANK

B1406

| | | |
|--|------|------|
| Square Shank, diameter at point, $\frac{7}{16}$ inches; at largest part, $1\frac{1}{4}$ inches; length of fluting, $1\frac{9}{16}$ inches..... | each | 1.25 |
|--|------|------|

With $\frac{1}{2}$ inch Round Shank same price as above.**VALVE FILE**

Fig. B1408

For Repairing the Seat of Flat Seat Valves.

Used With an Ordinary Brace

| | |
|---|-------|
| Set No. 1. $\frac{3}{8}$ in. to 1 in. 4 sizes | 6.00 |
| " " 2. $\frac{3}{4}$ " to 2 " 5 " | 8.00 |
| " " 3. $\frac{3}{8}$ " to 2 " 7 " | 10.00 |
| " " 4. $\frac{5}{8}$ " to 3 " 9 " | 15.00 |

MUELLER PIPE END REAMER

For Reaming Bur out of End of Pipe

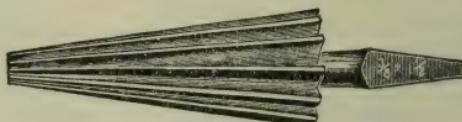


B1409 Plain Handle

B1410 Ratchet Handle

B1411 Square Shank for Brace

| | |
|---|------|
| Plain Pattern Reamer, Reams 3 inch and smaller.....each | 5.00 |
| Ratchet Handle " " " " " " | 7.50 |
| With Square Shank for Brace, Reams 1 1/4 inch and smaller " " | 3.50 |

TAPER STOVE REAMER

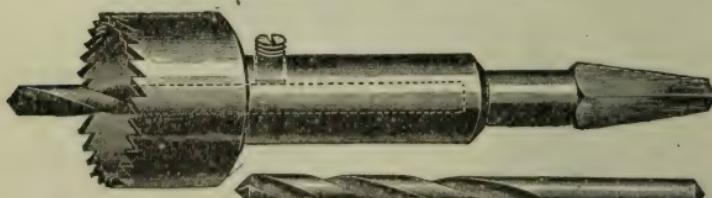
B1412

Intended for reaming hole to slip over pipe.

| Number | 1 | 2 | 3 | 4 | 5 |
|--------------------------|------------|--------------|--------------|--------------|--------------|
| Reams.....inches | 1/4 to 7/8 | 1/4 to 1 1/8 | 5/8 to 1 1/2 | 1/2 to 1 3/4 | 1/2 to 2 |
| Reams, Iron Pipe Sizes " | 1/4 to 1/2 | 1/4 to 3/4 | 5/8 to 1 | 1/2 to 1 1/4 | 1/2 to 1 1/2 |
| Price .....each | 3.00 | 3.50 | 4.50 | 5.50 | 6.50 |

CUP STOVE DRILL

With Set Screw and Loose Center Drill



B1413

| | | | | |
|---|---------------|---------------|------|----------------|
| Drills Hole to slip over Pipe as follows..... | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ |
| Price.....each | 2.50 | 2.75 | 3.00 | 3.50 |

TAPER SHANK TWIST DRILLS



B1415

Price also applies to Straight Shank Drills, of same length as below.

| Diameter Inches | Price Each | Length Over All Inches | Diam- eter Inches | Price Each | Length Over All Inches | Diam- eter Inches | Price Each | Length Over All Inches |
|--------------------|---------------|------------------------------|-------------------------|---------------|------------------------------|-------------------------|---------------|------------------------------|
| 1/8 | .45 | 5 1/8 | .64 | 2.00 | 9 7/8 | 1 25/64 | 5.40 | 14 5/8 |
| 3/16 | .45 | 5 3/8 | .64 | 2.00 | 9 7/8 | 1 13/32 | 5.40 | 14 5/8 |
| 11/64 | .50 | 5 5/16 | .64 | 2.15 | 10 | 1 61/64 | 5.60 | 14 3/4 |
| 3/8 | .50 | 5 3/4 | .64 | 2.15 | 10 | 1 7/16 | 5.60 | 14 3/4 |
| 13/64 | .55 | 5 1/8 | .64 | 2.30 | 10 1/4 | 1 29/64 | 5.80 | 14 7/8 |
| 7/32 | .55 | 5 7/8 | .64 | 2.30 | 10 1/4 | 1 15/32 | 5.80 | 14 7/8 |
| 15/64 | .60 | 6 1/3 | .64 | 2.45 | 10 1/2 | 1 31/64 | 6.00 | 15 |
| 1/4 | .60 | 6 1/8 | .75 | 2.45 | 10 1/2 | 1 1/2 | 6.00 | 15 |
| 17/64 | .65 | 6 1/4 | .75 | 2.60 | 10 5/8 | 1 33/64 | 6.30 | 15 1/8 |
| 9/32 | .65 | 6 1/4 | .75 | 2.60 | 10 5/8 | 1 35/64 | 6.30 | 15 1/8 |
| 19/64 | .70 | 6 3/8 | .75 | 2.75 | 10 3/4 | 1 35/64 | 6.60 | 15 1/4 |
| 5/16 | .70 | 6 3/8 | 1 15/16 | 2.75 | 10 3/4 | 1 9/16 | 6.60 | 15 1/4 |
| 21/64 | .75 | 6 1/2 | .64 | 2.90 | 10 7/8 | 1 37/64 | 6.90 | 15 3/8 |
| 11/32 | .75 | 6 1/2 | .31 | 2.90 | 10 7/8 | 1 19/32 | 6.90 | 15 3/8 |
| 23/64 | .80 | 6 3/4 | .64 | 3.00 | 11 | 1 39/64 | 7.20 | 15 1/2 |
| 3/8 | .80 | 6 3/4 | 1 | 3.00 | 11 | 1 5/8 | 7.20 | 15 1/2 |
| 25/64 | .85 | 7 | 1 1/64 | 3.20 | 11 1/8 | 1 41/64 | 7.50 | 15 5/8 |
| 13/32 | .85 | 7 | 1 3/32 | 3.20 | 11 1/8 | 1 21/32 | 7.50 | 15 5/8 |
| 27/64 | .90 | 7 1/4 | 1 1/4 | 3.40 | 11 1/4 | 1 33/64 | 7.80 | 15 3/4 |
| 7/16 | .90 | 7 1/4 | 1 15/16 | 3.40 | 11 1/4 | 1 11/16 | 7.80 | 15 3/4 |
| 29/64 | .95 | 7 1/2 | 1 5/64 | 3.60 | 11 1/2 | 1 45/64 | 8.10 | 15 7/8 |
| 15/32 | .95 | 7 1/2 | 1 3/32 | 3.60 | 11 1/2 | 1 23/64 | 8.10 | 15 7/8 |
| 31/64 | 1.00 | 7 3/4 | 1 7/64 | 3.80 | 11 3/4 | 1 47/64 | 8.40 | 16 |
| 1/2 | 1.00 | 7 3/4 | 1 1/8 | 3.80 | 11 3/4 | 1 3/4 | 8.40 | 16 |
| 23/64 | 1.10 | 8 | 1 9/64 | 4.00 | 11 7/8 | 1 19/64 | 8.60 | 16 1/8 |
| 17/32 | 1.10 | 8 | 1 5/32 | 4.00 | 11 7/8 | 1 25/32 | 8.60 | 16 1/8 |
| 35/64 | 1.20 | 8 1/4 | 1 11/64 | 4.20 | 12 | 1 21/64 | 8.80 | 16 1/4 |
| 9/16 | 1.20 | 8 1/4 | 1 3/16 | 4.20 | 12 | 1 13/16 | 8.80 | 16 1/4 |
| 37/64 | 1.30 | 8 1/2 | 1 13/64 | 4.40 | 12 1/8 | 1 53/64 | 9.00 | 16 3/8 |
| 19/32 | 1.30 | 8 1/2 | 1 7/32 | 4.40 | 12 1/8 | 1 27/32 | 9.00 | 16 3/8 |
| 39/64 | 1.40 | 8 3/4 | 1 15/64 | 4.50 | 12 1/2 | 1 55/64 | 9.20 | 16 1/2 |
| 5/8 | 1.40 | 8 3/4 | 1 1/4 | 4.50 | 12 1/2 | 1 7/8 | 9.20 | 16 1/2 |
| 41/64 | 1.50 | 9 | 1 6/64 | 4.65 | 14 1/8 | 1 53/64 | 9.35 | 16 1/2 |
| 21/32 | 1.50 | 9 | 1 9/32 | 4.65 | 14 1/8 | 1 29/32 | 9.35 | 16 1/2 |
| 43/64 | 1.60 | 9 1/4 | 1 19/64 | 4.80 | 14 1/4 | 1 59/64 | 9.50 | 16 1/2 |
| 11/16 | 1.60 | 9 1/4 | 1 5/16 | 4.80 | 14 1/4 | 1 15/16 | 9.50 | 16 1/2 |
| 45/64 | 1.70 | 9 1/2 | 1 21/64 | 5.00 | 14 3/8 | 1 61/64 | 9.65 | 16 1/2 |
| 23/32 | 1.70 | 9 1/2 | 1 11/32 | 5.00 | 14 3/8 | 1 31/32 | 9.65 | 16 1/2 |
| 47/64 | 1.85 | 9 3/4 | 1 23/64 | 5.20 | 14 1/2 | 1 63/64 | 9.80 | 16 1/2 |
| 3/4 | 1.85 | 9 3/4 | 1 3/8 | 5.20 | 14 1/2 | 2 | 9.80 | 16 1/2 |

Larger sizes quoted on application. Above Drills have taper shank as follows:

| | | | | | |
|------------------------------|--------------|----------------|----------------|--------------|-------------|
| Diameters (inclusive) inches | 1/8 to 37/64 | 19/32 to 29/32 | 59/64 to 1 1/4 | 1 17/64 to 2 | 2 1/64 to 3 |
| Shank Taper | Number 1 | 2 | 3 | 4 | 5 |

ROUND SHANK DRILLS



B1416

| Diam. | Price Each | Length | Diam. | Price Each | Length | Diam. | Price Each | Length |
|--------------------|------------|---------------------|---------------------|------------|--------|--------------------|------------|--------|
| $\frac{1}{8}$ inch | .55 | $4\frac{1}{8}$ inch | $\frac{7}{16}$ inch | .90 | 6 inch | $\frac{3}{4}$ inch | 1.25 | 6 inch |
| $\frac{3}{16}$ " | .58 | $5\frac{1}{8}$ " | $\frac{15}{32}$ " | .93 | 6 " | $\frac{25}{32}$ " | 1.30 | 6 " |
| $\frac{3}{8}$ " | .60 | 6 " | $\frac{1}{2}$ " | .95 | 6 " | $\frac{13}{32}$ " | 1.35 | 6 " |
| $\frac{7}{16}$ " | .65 | 6 " | $\frac{17}{32}$ " | .98 | 6 " | $\frac{21}{32}$ " | 1.40 | 6 " |
| $\frac{3}{4}$ " | .70 | 6 " | $\frac{1}{4}$ " | 1.00 | 6 " | $\frac{29}{32}$ " | 1.45 | 6 " |
| $\frac{9}{16}$ " | .73 | 6 " | $\frac{19}{32}$ " | 1.03 | 6 " | $\frac{31}{32}$ " | 1.55 | 6 " |
| $\frac{5}{8}$ " | .75 | 6 " | $\frac{21}{32}$ " | 1.05 | 6 " | $\frac{33}{32}$ " | 1.60 | 6 " |
| $\frac{11}{16}$ " | .80 | 6 " | $\frac{23}{32}$ " | 1.10 | 6 " | $\frac{35}{32}$ " | 1.70 | 6 " |
| $\frac{3}{2}$ " | .85 | 6 " | $\frac{11}{16}$ " | 1.15 | 6 " | 1 " | 1.80 | 6 " |
| $\frac{13}{16}$ " | .88 | 6 " | $\frac{23}{32}$ " | 1.20 | 6 " | | | |

The above drills have shanks $2\frac{1}{4}$ inches long and about $\frac{41}{64}$ inch in diameter.

ROUND I-2 INCH SHANK TWIST DRILLS

Short Lengths



B1417

| Diameter | Price Each | Length | Diameter | Price Each | Length |
|-------------------------|------------|-----------------------|--------------------------|------------|----------|
| $\frac{1}{8}$ inch..... | .45 | $5\frac{1}{8}$ inches | $\frac{7}{16}$ inch..... | .80 | 6 inches |
| $\frac{5}{16}$ " | .45 | $5\frac{3}{8}$ " | $\frac{15}{32}$ " | .83 | 6 " |
| $\frac{3}{8}$ " | .50 | $5\frac{7}{8}$ " | $\frac{1}{2}$ " | .85 | 6 " |
| $\frac{7}{16}$ " | .55 | $5\frac{15}{16}$ " | $\frac{17}{32}$ " | .88 | 6 " |
| $\frac{3}{4}$ " | .60 | 6 " | $\frac{9}{16}$ " | .90 | 6 " |
| $\frac{9}{16}$ " | .65 | 6 " | $\frac{19}{32}$ " | 1.00 | 6 " |
| $\frac{5}{8}$ " | .70 | 6 " | $\frac{21}{32}$ " | 1.05 | 6 " |
| $\frac{11}{16}$ " | .73 | 6 " | $\frac{23}{32}$ " | 1.10 | 6 " |
| $\frac{3}{2}$ " | .75 | 6 " | $\frac{11}{16}$ " | 1.15 | 6 " |
| $\frac{13}{16}$ " | .78 | 6 " | $\frac{23}{32}$ " | 1.25 | 6 " |

Drills larger than $\frac{3}{4}$ inch with Shanks $\frac{1}{2}$ inch in diameter, and Drills with Shanks about $\frac{41}{64}$ inch in diameter, fitting Silver & Deming's Press Nos. 3 and 4, same price as for Coe's Drill Press. All Drills larger than $\frac{7}{32}$ inch are 6 inches entire length. Shanks $2\frac{1}{2}$ inches long.

SLEEVE No. 104 FOR
MORSE TAPER SHANK

B1419

SOCKET FOR SQUARE SHANK
DRILL

B1420

| | | | | | | | | |
|-----------------------------|------|------|------|------|------|------|------|-------|
| B1419. Number | 1 | 1 | 1 | 2 | 2 | 3 | 4 | 5 |
| Fitted to Socket.....number | 2 | 3 | 4 | 3 | 4 | 4 | 5 | 6 |
| Sleeve. No. 104.....each | 1.80 | 1.80 | 3.00 | 2.40 | 3.00 | 3.00 | 4.40 | 10.00 |
| B1420. Socket Number | | | | | | | 2 | 3 |
| Flat Drill Sockets.....each | | | | | | | 1.75 | 2.25 |

STRAIGHT SHANK TWIST DRILLS

SHORT LENGTH



B1421

| SHORT SET | | | | | LETTER SIZES | | | | |
|--------------------|-----------------------|---------------|-----------------------|-----------------------------|--------------------|----------------------|---------------|-----------------------|-----------------------------|
| Diameter Inches | Price per Dozen | Price Each | Decimals of 1 Inch | Length OverAll Inches | Diameter Inches | Price per Doz. | Price Each | Decimals of 1 Inch | Length OverAll Inches |
| 1/16 | 1.00 | .09 | .0625 | 2 1/2 | A 15/64 | 2.90 | .26 | .234 | 3 13/16 |
| 5/64 | 1.10 | .10 | .0781 | 2 5/8 | B | 3.00 | .27 | .238 | 3 13/16 |
| 3/32 | 1.20 | .11 | .0937 | 2 3/4 | C | 3.10 | .28 | .242 | 3 13/16 |
| 7/64 | 1.30 | .12 | .1093 | 2 7/8 | D | 3.20 | .29 | .246 | 3 13/16 |
| 1/8 | 1.45 | .13 | .1250 | 3 | E 1/4 | 3.30 | .30 | .250 | 3 13/16 |
| 9/64 | 1.60 | .15 | .1406 | 3 1/8 | F | 3.40 | .30 | .257 | 4 1/4 |
| 5/32 | 1.80 | .16 | .1562 | 3 1/4 | G | 3.50 | .31 | .261 | 4 1/4 |
| 11/64 | 2.00 | .18 | .1718 | 3 3/8 | H 17/64 | 3.60 | .32 | .266 | 4 1/4 |
| 3/16 | 2.20 | .20 | .1875 | 3 1/2 | I | 3.70 | .33 | .272 | 4 1/4 |
| 13/64 | 2.40 | .21 | .2031 | 3 5/8 | J | 3.80 | .34 | .277 | 4 1/4 |
| 7/32 | 2.65 | .23 | .2187 | 3 3/4 | K 9/32 | 3.90 | .35 | .281 | 4 1/4 |
| 15/64 | 2.90 | .26 | .2343 | 3 7/8 | L | 4.00 | .36 | .290 | 4 1/4 |
| 1/4 | 3.15 | .28 | .2500 | 4 | M 19/64 | 4.10 | .36 | .295 | 4 1/4 |
| 17/64 | 3.40 | .30 | .2656 | 4 1/8 | N | 4.20 | .37 | .302 | 4 1/4 |
| 9/32 | 3.65 | .32 | .2812 | 4 1/4 | O 5/16 | 4.30 | .38 | .316 | 4 1/4 |
| 19/64 | 3.90 | .35 | .2968 | 4 3/8 | P 21/64 | 4.40 | .39 | .323 | 4 5/8 |
| 5/16 | 4.20 | .37 | .3125 | 4 1/2 | Q | 4.60 | .40 | .332 | 4 3/4 |
| 21/64 | 4.50 | .40 | .3281 | 4 5/8 | R 11/32 | 4.80 | .42 | .339 | 4 3/4 |
| 11/32 | 4.80 | .42 | .3437 | 4 3/4 | S | 5.00 | .44 | .348 | 4 7/8 |
| 23/64 | 5.10 | .45 | .3593 | 4 7/8 | T 23/64 | 5.20 | .45 | .358 | 4 7/8 |
| 3/8 | 5.40 | .48 | .3750 | 5 | U | 5.40 | .47 | .368 | 5 |
| 25/64 | 5.70 | .50 | .3906 | 5 1/8 | V 3/8 | 5.60 | .49 | .377 | 5 |
| 13/32 | 6.00 | .53 | .4062 | 5 1/4 | W 25/64 | 5.80 | .51 | .386 | 5 1/8 |
| 27/64 | 6.40 | .55 | .4218 | 5 3/8 | X | 6.00 | .53 | .397 | 5 1/4 |
| 7/16 | 6.80 | .59 | .4375 | 5 1/2 | Y 13/32 | 6.40 | .55 | .404 | 5 1/4 |
| 29/64 | 7.20 | .63 | .4531 | 5 5/8 | Z | 6.80 | .59 | .413 | 5 3/8 |
| 15/32 | 7.50 | .65 | .4687 | 5 3/4 | ..... | ..... | .... | .... | .... |
| 31/64 | 7.75 | .67 | .4843 | 5 7/8 | ..... | ..... | .... | .... | .... |
| 1/2 | 8.00 | .70 | .5000 | 6 | ..... | ..... | .... | .... | .... |

For larger sizes, see B1415

STEEL WIRE GAUGE SIZES

B1422

| Numbers by Gauge | Price per Doz. | Price Each. | Length In. | Numbers by Gauge. | Price per Doz. | Price Each. | Length In. |
|---------------------|-------------------|----------------|---------------|----------------------|-------------------|----------------|-----------------|
| 1 to 5 | 2.35 | .22 | 4 | 31 to 35 | 1.40 | .14 | 2 5/8 |
| 6 to 10 | 2.25 | .21 | 3 11/16 | 36 to 40 | 1.25 | .12 | 2 7/16 |
| 11 to 15 | 2.10 | .20 | 3 1/2 | 41 to 45 | 1.10 | .10 | 2 1/4 |
| 16 to 20 | 1.95 | .19 | 3 1/4 | 46 to 60 | .95 | .09 | 2 1/16 to 1 1/4 |
| 21 to 25 | 1.75 | .17 | 3 1/16 | 61 to 70 | .90 | .08 | 1 1/2 |
| 26 to 30 | 1.55 | .15 | 2 13/16 | 71 to 80 | 1.00 | .09 | 1 5/16 to 1 3/4 |

DRILLS WITH SQUARE SHANK, FITTING RATCHET



B1423

| Diameter Inches | Price Each | Length Over All Inches | Diameter Inches | Price Each | Length Over All Inches | Diameter Inches | Price Each | Length Over All Inches | Diameter Inches | Price Each | Length Over All Inches |
|--------------------|---------------|---------------------------------|--------------------|---------------|---------------------------------|--------------------|---------------|---------------------------------|--------------------|---------------|---------------------------------|
| 1/4 | 1.00 | 5 | 5/8 | 1.40 | 6 1/2 | 1 | 2.55 | 8 1/2 | 1 1/8 | 4.20 | 9 |
| 9/32 | 1.05 | 5 | 21/32 | 1.45 | 6 1/2 | 1 1/32 | 2.70 | 8 1/2 | 1 1/32 | 4.35 | 9 |
| 5/32 | 1.10 | 5 | 1 1/8 | 1.45 | 6 1/2 | 1 1/16 | 2.85 | 8 1/2 | 1 1/16 | 4.50 | 9 |
| 11/32 | 1.15 | 5 | 2 1/32 | 1.50 | 6 1/2 | 1 1/32 | 3.00 | 8 1/2 | 1 1/32 | 4.65 | 9 |
| 3/16 | 1.20 | 6 | 3/4 | 1.55 | 6 1/2 | 1 1/8 | 3.10 | 9 | 1 1/2 | 4.80 | 9 |
| 13/32 | 1.25 | 6 1/4 | 2 1/32 | 1.65 | 6 1/2 | 1 3/8 | 3.25 | 9 | 1 1/8 | 5.25 | 9 |
| 7/16 | 1.25 | 6 1/4 | 1 1/32 | 1.75 | 7 | 1 1/6 | 3.35 | 9 | 1 1/8 | 5.75 | 9 |
| 13/32 | 1.30 | 6 1/4 | 2 1/32 | 1.90 | 7 | 1 7/32 | 3.50 | 9 | 1 1/8 | 6.25 | 9 |
| 1/2 | 1.30 | 6 1/2 | 2 1/32 | 2.05 | 7 1/2 | 1 1/4 | 3.65 | 9 | 1 3/4 | 6.75 | 9 |
| 13/32 | 1.35 | 6 1/2 | 2 1/32 | 2.20 | 7 1/2 | 1 3/2 | 3.75 | 9 | 1 1/8 | 7.05 | 9 |
| 9/16 | 1.35 | 6 1/2 | 1 15/16 | 2.30 | 8 | 1 5/8 | 3.90 | 9 | 1 1/8 | 7.35 | 9 |
| 19/32 | 1.40 | 6 1/2 | 3 1/32 | 2.40 | 8 | 1 3/2 | 4.05 | 9 | 1 1/8 | 7.60 | 9 |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 7.85 | 9 |

No. 1 Shanks are $\frac{3}{8} \times \frac{5}{8} \times 1\frac{1}{2}$ inches long. No. 2 Shanks are $\frac{1}{2} \times \frac{3}{8} \times 1\frac{1}{4}$ inches long.
When ordering, state number of Shank or manufacturer of Ratchet.

BIT STOCK DRILL FOR METAL OR WOOD



B1424

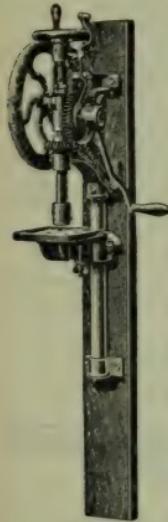
For Use in Brace

| Diameter Inches | Price Per Dozen | Price Each | Length Over All Inches | Dia- meter Inches | Price Per Dozen | Price Each | Length Over All Inches |
|--------------------|-----------------------|---------------|------------------------------|-------------------------|-----------------------|---------------|------------------------------|
| 1/8 | 1.50 | .14 | 3 9/16 | 7/16 | 8.80 | .75 | 6 1/2 |
| 3/32 | 1.65 | .16 | 4 | 4/32 | 9.60 | .82 | 6 3/4 |
| 1/16 | 2.10 | .20 | 4 | 1/2 | 10.30 | .87 | 7 |
| 5/32 | 2.60 | .24 | 4 1/4 | 1 7/32 | 11.00 | .92 | 7 1/4 |
| 7/32 | 3.10 | .29 | 4 1/2 | 1 9/32 | 14.35 | 1.20 | 7 1/2 |
| 3/16 | 3.60 | .33 | 4 1/4 | 5/8 | 16.15 | 1.35 | 7 1/2 |
| 1/4 | 4.10 | .38 | 5 | 1 1/8 | 17.95 | 1.50 | 7 1/2 |
| 9/32 | 4.70 | .43 | 5 1/4 | 3/4 | 19.75 | 1.65 | 7 1/4 |
| 5/16 | 5.40 | .48 | 5 1/2 | 1 3/8 | 21.55 | 1.80 | 7 1/2 |
| 6/32 | 6.30 | .54 | 5 1/4 | 1 1/16 | 23.35 | 1.95 | 7 1/2 |
| 7/32 | 7.20 | .62 | 6 | 1 1/8 | 25.75 | 2.15 | 7 1/4 |
| 13/32 | 8.00 | .68 | 6 1/4 | ... | 28.15 | 2.35 | 7 1/4 |

These Drills are carried in stock, with diameters varying by 64ths.

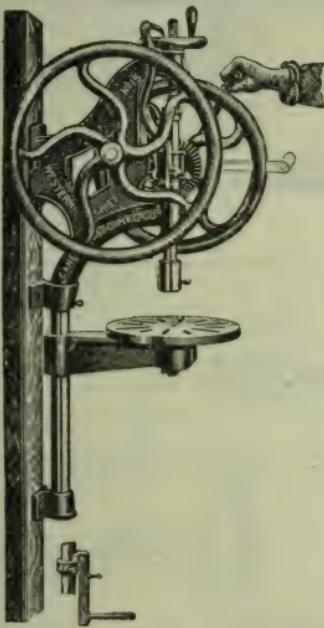
DRILL PRESSES

No. 3



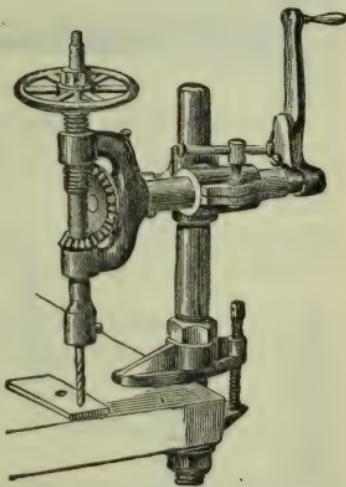
B1430

No. 15



B1431

ANGULAR AND RATCHET DRILLING MACHINE



B1432

No. 3

Drills to center of $14\frac{1}{2}$ -inch circle, and carries a bit up to 1-inch diameter. Takes bits $\frac{1}{2}$ to $\frac{11}{16}$ shank. Weight, 100 pounds.

| | | |
|-------------|------|-------|
| Price | each | 10.00 |
|-------------|------|-------|

No. 15

Drills to center of 19-inch circle. Bores from 0 to $1\frac{1}{2}$ inches. Takes bits $\frac{1}{2}$ or $\frac{11}{16}$ shank. Run of spindle, $4\frac{1}{2}$ inches. Weight, 175 pounds.

| | | |
|-----------------------------------|------|-------|
| Price, Hand Power only..... | each | 17.50 |
| " Both Hand and Pulley Power..... | " | 19.50 |

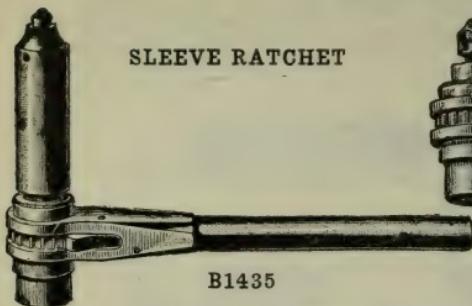
No. 3 or No. 15 Presses can be furnished with tight and loose pulley power attachments for \$2.00 net extra.

When ordering, please state if wanted for $\frac{1}{2}$ or $\frac{11}{16}$ shank bits.

ANGULAR AND RATCHET DRILLING MACHINES

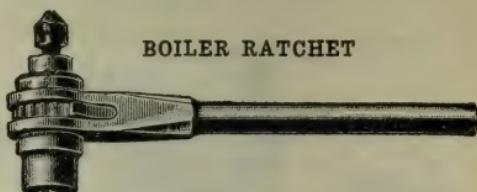
| Number..... | 1 | *2 |
|---------------------------------|---------------|-------|
| Size Hole Will Drill.....inches | $\frac{5}{8}$ | 1 |
| Weight.....pounds | 34 | 64 |
| Price .....each | 20.00 | 25.00 |

PACKER RATCHETS



SLEEVE RATCHET

B1435

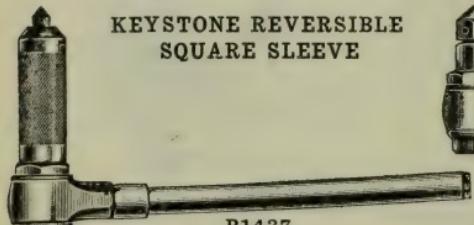


BOILER RATCHET

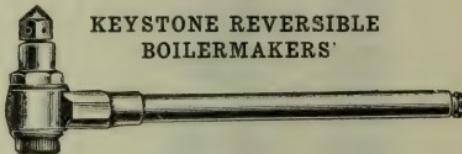
B1436

| Number..... | 1 | 2 | 3 | 4 | 5 |
|-----------------------------|-------|-------|-------|-------|-------|
| Sleeve Ratchets.....each | 10.50 | 13.50 | 16.00 | 19.00 | 23.00 |
| Boiler " " | 9.00 | 10.50 | ... | ... | ... |
| Length of Handle.....inches | 10 | 12 | 15 | 17 | 20 |

The Sleeve Ratchets can be furnished with Morse Taper Shank holes in socket.

KEYSTONE REVERSIBLE
SQUARE SLEEVE

B1437

KEYSTONE REVERSIBLE
BOILERMAKERS'

B1438

| Handle.....inches | 10 | 14 | 16 | 18 | 22 | 24 | 28 |
|------------------------------|------|------|------|------|------|------|------|
| Square Sleeve or Boiler, ea. | 5.00 | 5.75 | 6.50 | 7.25 | 7.50 | 7.75 | 8.25 |
| Morse Taper, like B1437 " | 5.25 | 6.00 | 6.75 | 7.50 | 7.75 | 8.00 | 8.50 |

KEYSTONE SQUARE SLEEVE AND BOILERMAKER'S
RATCHETS

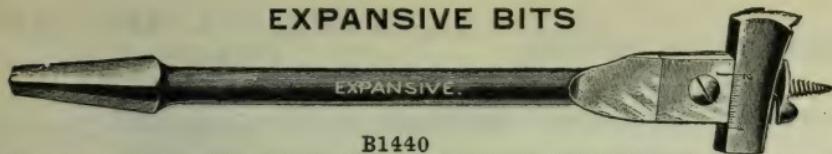
| | | | |
|-----------------------------|--------|---|--|
| Handle | inches | 10, 14, 16 | 18, 22, 24, 28 |
| Standard Square Taper | | No. 1, $\frac{5}{8} \times \frac{3}{8} \times 1\frac{1}{2}$ in. | No. 2, $\frac{3}{4} \times 1\frac{1}{2} \times 1\frac{3}{4}$ in. |

KEYSTONE MORSE TAPER RATCHETS

| | | | | |
|------------------------------|--------|-----------------|----------------|------------------|
| Handle | inches | 10 | 14, 16 | 18, 22 24, 28 |
| Bore of Socket Taper..... | number | 2 | 3 | 4 |
| For Drills up to inches..... | " | $\frac{29}{32}$ | $1\frac{1}{4}$ | 2 |

SQUARE SHANK SLEEVES FOR MORSE TAPER RATCHETS
To Hold Square Shank Drills

| Number | 1 | 2 | 3 | 4 |
|-----------------|------|------|------|------|
| Price .....each | 1.00 | 1.25 | 1.25 | 1.50 |

EXPANSIVE BITS

B1440

| | | | | |
|----------|--|------------|------|------|
| No. 1... | Cutting $\frac{1}{2}$ to $1\frac{1}{2}$ inches | Price..... | each | 1.50 |
| No. 2... | Cutting $\frac{7}{8}$ to 3 inches | Price..... | each | 2.20 |

EXTRA CUTTERS FOR EXPANSIVE BITS

| Number..... | 1 | 2 | 3 | 4 | 5 | 6 |
|--------------------|--------------------------------|---------------------------------|---------------------------------|---------------------|--------|--------|
| For Bit Number... | 1 | 1 | 2 | 2 | 2 | 2 |
| Size..... inches | $\frac{1}{2}$ to $\frac{7}{8}$ | $\frac{7}{8}$ to $1\frac{1}{2}$ | $\frac{7}{8}$ to $1\frac{3}{4}$ | $1\frac{3}{4}$ to 3 | 3 to 4 | 4 to 5 |
| Price.....per doz. | 3.00 | 3.75 | 5.25 | 6.00 | 9.00 | 12.00 |

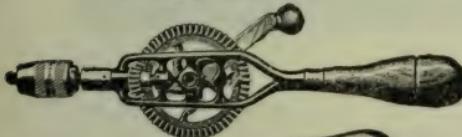
BRACES

B1441

| | | | |
|-------------------------|-----|---------------------------|-----|
| 8 inch Sweep, each..... | \| .65 | 10 inch Sweep, each ..... | \| .70 |
|-------------------------|-----|---------------------------|-----|

RATCHET

| | | | |
|-------------------------|------|--------------------------|------|
| 8 inch Sweep, each..... | \| 1.75 | 10 inch Sweep, each..... | \| 2.00 |
|-------------------------|------|--------------------------|------|

HAND DRILL

B1442

Each, \$2.50.

BREAST DRILL

B1443

Each, \$5.00.

CHAIN DRILLERFor Use With Common or
Ratchet Brace

No. 1, \$2.00.

No. 2, \$2.50.

No. 1 is
for Bit Stock
Drills.No. 2 is for
drills having
 $\frac{1}{2}$ in. round
shank.

B1444

ADJUSTABLE FRAME**ADJUSTABLE HACK SAW FRAME****B1450**

For 8 to 12 inch blades, each, \$1.00.

HACK SAW BLADES**B1451****Price List of Hard and Flexible Back Blades**

| Length | inches | 6 | 7 | 8 | 9 | 10 | 12 |
|--------------|-----------|-----|-----|-----|-----|-----|------|
| Price..... | per dozen | .55 | .60 | .65 | .70 | .85 | 1.05 |

POWER HACK SAW BLADES

| Inches..... | | 12x $\frac{5}{8}$ | 12x $\frac{3}{4}$ | 14x $\frac{3}{4}$ | 16x $\frac{3}{4}$ |
|-------------|-------|-------------------|-------------------|-------------------|-------------------|
| Atkins..... | dozen | 1.05 | 1.50 | 1.67 | 2.17 |

COMPASS SAW**B1452**

| Inch..... | 10 | 12 | 14 | 16 |
|------------|-----|-----|-----|-----|
| Each | .45 | .50 | .55 | .60 |

MACHINIST HAMMER

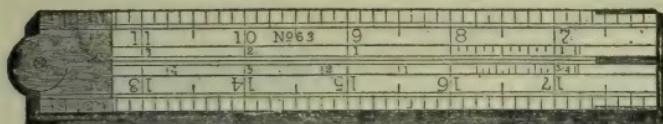
Ball Pein

**B1455****Price List, Ball, Cross or Straight Pein**

| Number..... | 00 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------|-------|--------|-------|--------------------|--------------------|--------------------|-------|--------------------|--------------------|--------------------|
| Per dozen..... | 12.00 | 12.50 | 13.50 | 14.50 | 15.50 | 16.50 | 17.50 | 19.00 | 20.50 | 22.00 |
| Weight..... | each | 12 oz. | 1 lb | 1 $\frac{1}{4}$ lb | 1 $\frac{1}{2}$ lb | 1 $\frac{3}{4}$ lb | 2 lb | 2 $\frac{1}{4}$ lb | 2 $\frac{1}{2}$ lb | 2 $\frac{3}{4}$ lb |

**ENGINEER'S HAMMER****B1456**

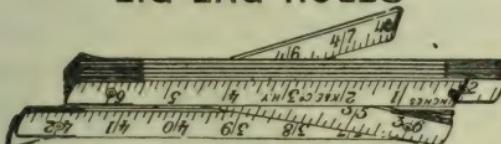
| Number | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
|--------------|-----------|-------------|--------------|-------|---------------------|-------|---------------------|
| Price..... | per dozen | 12.00 | 13.00 | 14.00 | 15.00 | 16.00 | 17.00 |
| Weight..... | each | 1 lb. 2 oz. | 1 lb. 10 oz. | 2 lb. | 2 $\frac{1}{2}$ lb. | 3 lb. | 3 $\frac{1}{2}$ lb. |

BOXWOOD RULES

B1458

| | | |
|--|-----------|------|
| No. 84. Half Bound, 8ths, 10ths, 12ths, and 16ths of inches, 1 inch wide..... | per dozen | 6.50 |
| No. 62. Full Bound, 8ths, 10th, 12ths, and 16ths of inches, 1 inch wide..... | " | 8.00 |
| No. 65½. One foot, full bound..... | " | 5.50 |
| No. 68, 8th and 16th of inch, 1 inch wide, 2 ft..... | " | 2.50 |
| " 69, " " " " 1 " | " | 1.75 |

Numbers 84, 62 and 65, two foot, are with drafting scales.

ZIG ZAG RULES

B1459

Made of flexible hard wood, with plated steel joints.

| Length..... feet | 2 | 3 | 4 | 5 | 6 | 8 |
|---------------------------------|------|------|------|------|------|-------|
| Plain..... per dozen | 2.00 | 3.00 | 4.00 | 5.00 | 6.00 | 8.00 |
| White Enamel, brass joints.. | 2.50 | 3.75 | 5.00 | 6.25 | 7.50 | 10.00 |

LOG RULES

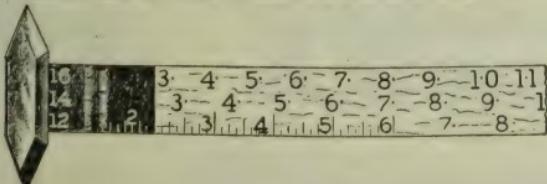
B1460

| | | |
|-----------------------------------|-----------|-------|
| No. 14. Square Head Log Rule..... | per dozen | 27.00 |
|-----------------------------------|-----------|-------|

Figured 48 inches, with 8-inch handle. Full length, 4 ft. 8 ins.

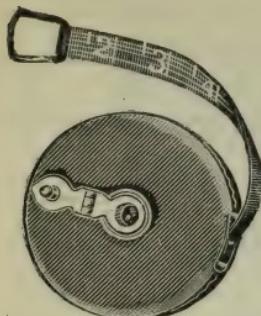
SPECIAL BOARD RULES

Hand-made from Selected Second Growth.



B1461

| | | |
|------------------------------------|-----------|-------|
| Square Head, 3-tier, 3½ foot..... | per dozen | 27.50 |
| Diamond Head, 3-tier, 3½ foot..... | " | 30.00 |



TAPE LINES

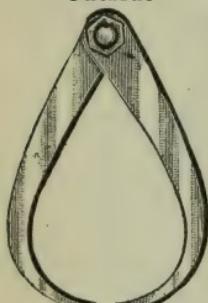
B1465

| Size..... | feet | 25 | 30 | 50 | 75 | 100 |
|---|-------|-------|-------|-------|-------|-----|
| Linen Line, Ass Skin Case, Brass Bound..... | 5.00 | 5.50 | 8.00 | 10.00 | 12.50 | |
| Linen Metallic, in Hard Leather Case..... | 25.20 | ..... | 34.80 | 43.20 | 54.00 | |
| Steel Line, in Hard Leather Case..... | 39.00 | ..... | 48.00 | 63.00 | 81.00 | |

CALIPERS AND DIVIDERS

IMPROVED FIRM JOINT CALIPER

Outside



B1467

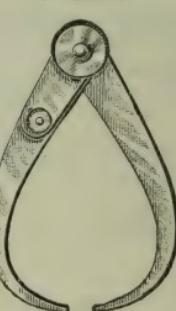
Inside



B1468

LOCK JOINT CALIPER

Outside



B1469

Inside



B1470

WING DIVIDER



B1471

| Size..... | inches | 3 | 4 | 5 | 6 | 8 | 10 | 12 |
|-------------------------|--------|------|------|-----|------|------|------|------|
| Firm Joint Caliper..... | each | .40 | .50 | .55 | .65 | .80 | .90 | 1.00 |
| Lock " " | " | .... | .90 | .95 | 1.00 | 1.25 | 1.50 | 1.75 |
| Wing Dividers..... | " | .... | .... | .60 | .65 | .85 | 1.15 | 1.35 |

| Size..... | inches | 14 | 15 | 16 | 18 | 20 | 24 | 30 | 36 |
|-------------------------|--------|------|------|------|------|------|------|------|------|
| Firm Joint Caliper..... | each | 1.50 | .... | 1.75 | 2.10 | 2.50 | 3.00 | 5.00 | 6.00 |
| Lock " " | " | 2.00 | .... | 2.25 | 2.50 | 2.75 | 3.50 | .... | .... |
| Wing Dividers..... | " | .... | 2.30 | .... | 3.50 | .... | .... | .... | .... |

METALLIC PLUMB LEVEL.



B1472



B1474

WOODEN PLUMB
AND LEVEL.

B1475

Prices on application.

BELT TOOLS

BELT PUNCHES



B1480

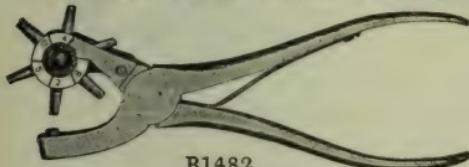
ROUND BELT PUNCHES

| | | |
|------------------------|-----------|------|
| Nos. 00, 0 | per dozen | 4.00 |
| " 1, 2, 3, 4, 5 | " | 2.00 |
| " 6, 7, 8, 9 | " | 2.25 |
| " 10, 11, 12 | " | 2.50 |
| " 13, 14, 15, 16 | " | 6.00 |

OVAL BELT PUNCHES

| | | |
|--------------------------|-----------|-------|
| Nos. 1, 2, 3, 4, 5 | per dozen | 4.00 |
| " 6, 7, 8, 9 | " | 4.50 |
| " 10, 11, 12 | " | 5.00 |
| " 13, 14, 15, 16 | " | 12.00 |

REVOLVING SPRING PUNCH



B1482

| | | |
|-----------------------|----------|-------|
| With Four Tubes | per doz. | 15.00 |
| With Six Tubes | " | 17.50 |
| Extra Tubes | " | 2.50 |

DRAW GAUGE



B1484

Patent Hollow Handle Draw Gauge.
Each, \$1.25.

Patent Hollow Handle Improved Draw
Gauge, each, \$1.50.

WIRE LACE GROOVER



B1487

Price each, 50c.

ROGERS BELT PUNCH

Cuts Holes $\frac{1}{16}$ to $\frac{3}{8}$ Inch
Diameter



B1481

Price each, 75c.

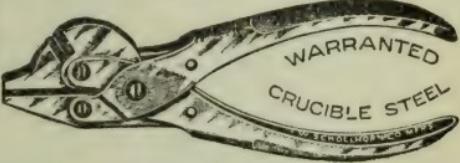
SPRING PUNCHES



B1483

Price each, 75c.

WIRE LACE CUTTER



B1485

Price each, \$1.00.

WIRE LACE MARKER



B1486

Price each, 25c.

LOTHROP'S BELT AWL

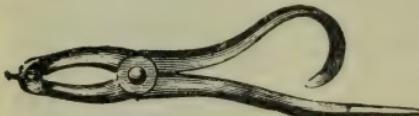


B1488

Price each, 50c.

BELT TOOLS AND GASKET CUTTERS

AWL AND PLIERS COMBINED
For Use With Belt Studs



B1489

Each.....40c.

ADJUSTABLE BELT PLANE

B1490

With 2½-inch Cutter, each, \$2.00

RUBBER AND LEATHER CUTTER
For Use with Belt Studs



B1491

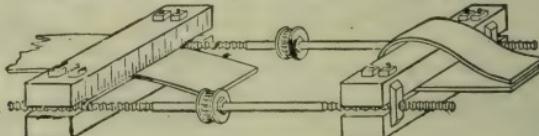
Large Cutter for Rubber Belt, each.....1.25

Small Cutter for Leather Belt, each..... .90

LACE CUTTER

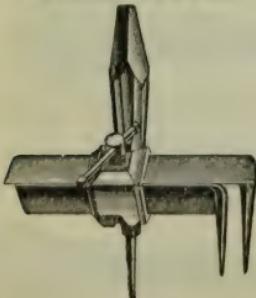
B1492

Each.....50c.

WESTON'S WOOD JAW BELT CLAMP

B1495

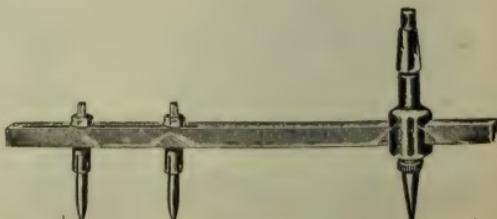
| | | | | | | | |
|---------------------|--------|-------|-------|-------|-------|-------|-------|
| Width of Belt | inches | 12 | 18 | 24 | 30 | 36 | 55 |
| Weston Clamp | each | 11.50 | 14.00 | 16.00 | 19.00 | 24.00 | 37.00 |

WASHER CUTTER

B1496

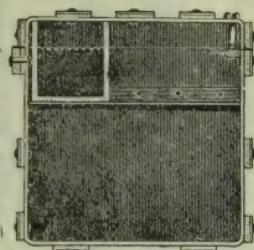
Cut 6 inches, each....1.00

Cut 8 " "1.25

CENTURY GASKET AND WASHER CUTTER

B1497

Cut 24 inches and smaller, each...3.00

STEEL TOOL CHESTS**STYLE A**

B1499

| Number..... | 1 | 2 | 3 | 4 |
|------------------------------|-------|-------|-------|-------|
| Style A, with 1 Drawer | 12.50 | 17.00 | 19.00 | 22.00 |
| " A, " 2 Drawers..... | " | 13.00 | 18.00 | 20.25 |
| " B, " 1 Tray..... | " | 13.00 | 18.50 | 20.50 |
| " B, " 2 Trays..... | " | 13.50 | 19.00 | 21.00 |
| " D, " 3 Drawers | " | 15.50 | 21.00 | 23.00 |
| " E, " 2 " | " | 14.50 | 20.00 | 22.00 |
| " F, " 1 Drawer..... | " | 13.50 | 19.00 | 21.00 |
| " C..... | " | 12.50 | 15.00 | 17.00 |
| | | | | 20.00 |

Price includes Brass Padlock.

Dimensions: Style "C," 11 inches deep, 12 inches wide, and length as follows: No. 1, 30 inches; No. 2, 36 inches; No. 3, 42 inches; No. 4, 48 inches; and has no drawers or divisions.

Sizes "A," "B," "D," "E," and "F." No. 1, 11 inches deep, 12 inches wide, 24 inches long; No. 2, 14 inches deep, 15 inches wide, 30 inches long; No. 3, 16 inches deep, 17 inches wide, and 36 inches long; No. 4, 19 inches deep, 20 inches wide, and 42 inches long.

Style "A" has narrow sliding drawers, as illustrated above.

Style "B" has two trays, with divisions in trays. These trays are exact width and length to drop into chest, and resting on flanges in end of chest they leave an open space in bottom.

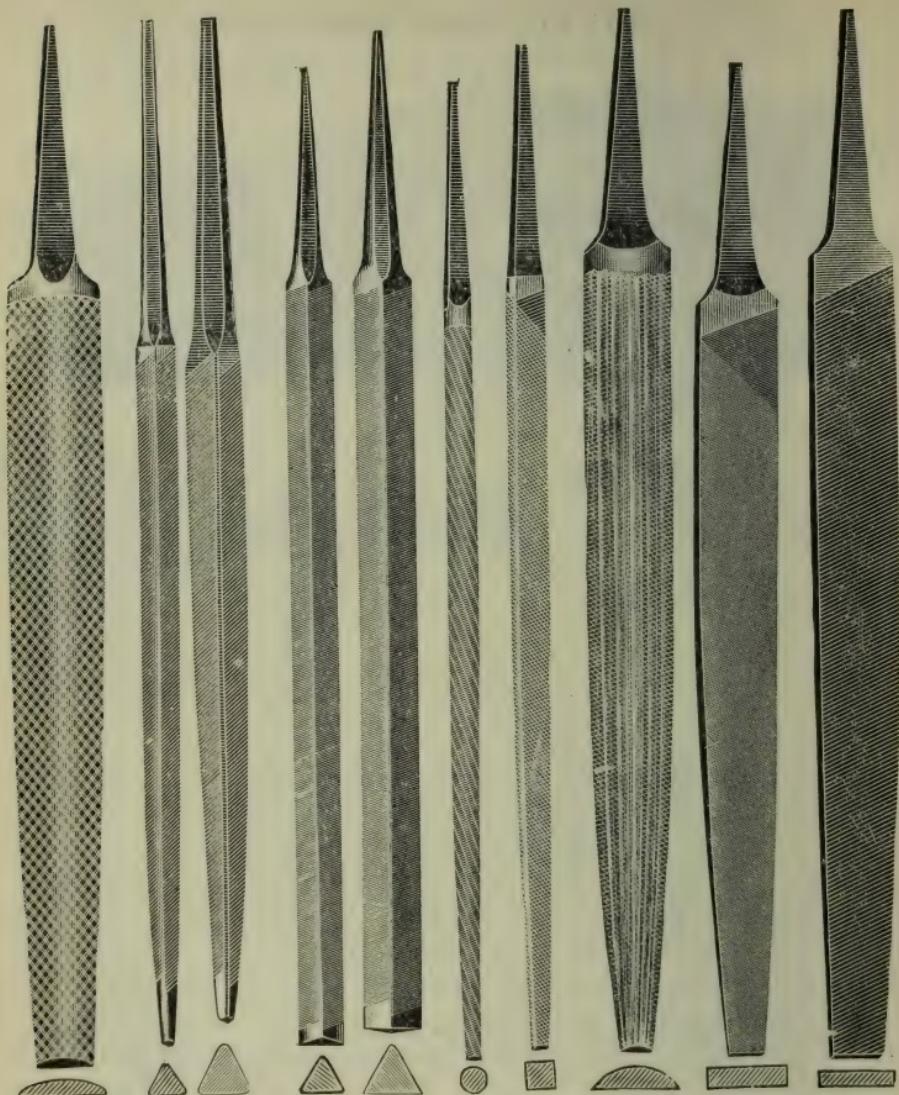
Style "C" is without drawers or trays. Style "D" has three drawers with divisions in drawers; also a division lengthwise at bottom with a sliding cover over bottom division. Style "E" has two drawers with divisions in drawers, and divisions lengthwise of bottom.

Style "F" has one drawer with division in drawer and division lengthwise of bottom.

Sizes are inside measurements of body. Covers are two inches deep, and are not included in depth of chest.

Chests are not in stock, but are made to order.

They are made from $\frac{1}{8}$ -inch sheet steel with malleable corner pieces.



FLAT BASTARD
B1500

HALF ROUND BASTARD
B1501

ROUND BASTARD
B1504

SQUARE BASTARD
B1503

HALF ROUND BASTARD
B1502

REGULAR TAPER
B1507

SLIM TAPER
B1508

BAND SAW, REGULAR
BLUNT SINGLE CUT
BAND SAW SLIM BLUNT
SINGLE CUT

HALF ROUND WOOD RASP
B1510

PRICE LIST OF FILES AND RASPS

AS Adopted by the File Manufacturers' Association of the United States; November 1, 1899

List of November 1, 1899

Price per Dozen

| MILL AND ROUND | | FLAT | | SQUARE | | HAND AND PILLAR | | HALF ROUND AND THREE SQUARE | | WARDING | |
|-------------------|--------|--------|---------|--------|--------|--------------------|--------|--------------------------------|---------|---------|--------|
| HONI | | HONI | | HONI | | HONI | | Bastard | | Bastard | |
| Bastard | 2d Cut | Smooth | Bastard | 2d Cut | Smooth | Bastard | 2d Cut | Smooth | Bastard | 2d Cut | Smooth |
| 3.00 | 3.50 | 3.90 | 3.70 | 4.30 | 4.70 | 3.80 | 4.60 | 4.90 | 3.70 | 4.30 | 4.80 |
| 3.20 | 3.80 | 4.10 | 3.90 | 4.60 | 4.90 | 4.10 | 4.80 | 5.30 | 4.70 | 5.30 | 5.40 |
| 3.50 | 4.00 | 4.50 | 4.30 | 4.80 | 5.30 | 5 | 5.10 | 5.50 | 5.10 | 5.50 | 6.10 |
| 4 | 4.60 | 4.90 | 5.00 | 5.30 | 6 | 4.60 | 5.10 | 5.50 | 5.60 | 6 | 6.10 |
| 5 | 5.10 | 5.50 | 6.10 | 6.30 | 7 | 5.10 | 5.80 | 6.30 | 6.30 | 7 | 7.00 |
| 6 | 5.80 | 6.30 | 6.50 | 6.80 | 8 | 5.50 | 6.30 | 6.80 | 6.80 | 8 | 7.50 |
| 7 | 6.30 | 6.80 | 7.00 | 7.30 | 9 | 6.60 | 7.30 | 7.80 | 7.80 | 9 | 8.30 |
| 8 | 6.90 | 7.30 | 7.50 | 7.90 | 10 | 7.40 | 8.50 | 9.10 | 8.30 | 9 | 9.40 |
| 9 | 7.50 | 7.90 | 8.10 | 8.50 | 11 | 7.90 | 9.10 | 9.70 | 9.40 | 10 | 10.40 |
| 10 | 8.10 | 8.50 | 8.70 | 9.10 | 12 | 8.50 | 9.10 | 10.40 | 11.80 | 11 | 12.70 |
| 11 | 8.70 | 9.10 | 9.30 | 9.80 | 13 | 9.10 | 10.40 | 11.80 | 12.70 | 12 | 13.70 |
| 12 | 9.30 | 9.70 | 10.00 | 11.50 | 14 | 9.70 | 11.50 | 12.80 | 13.50 | 13 | 14.30 |
| 13 | 10.70 | 11.70 | 12.00 | 13.60 | 15 | 10.70 | 12.50 | 14.30 | 15.20 | 14 | 15.40 |
| 14 | 12.20 | 13.10 | 13.30 | 15.30 | 16 | 12.20 | 13.30 | 15.40 | 16.30 | 15 | 16.60 |
| 15 | 13.10 | 15.00 | 16.00 | 18.30 | 18 | 13.10 | 15.00 | 17.50 | 18.20 | 14 | 18.70 |
| 16 | 14.70 | 16.80 | 17.90 | 20.10 | 22 | 14.70 | 16.80 | 20.30 | 21.70 | 15 | 21.70 |
| 17 | 18.20 | 20.20 | 21.50 | 24.70 | 26 | 17 | 22.50 | 25.40 | 24.70 | 26.60 | 24.20 |
| 18 | 20.20 | 22.70 | 24.30 | 26.80 | 29 | 18 | 25.10 | 28.20 | 30.40 | 26.80 | 29.90 |
| 19 | 24.60 | 27.50 | 29.40 | 31.70 | 34 | 19 | 29.70 | 33.20 | 35.70 | 31.90 | 35.40 |
| 20 | 27.40 | 30.70 | 31.50 | 35.30 | 38 | 20 | 32.80 | 36.70 | 39.30 | 35.10 | 39.20 |

FILES

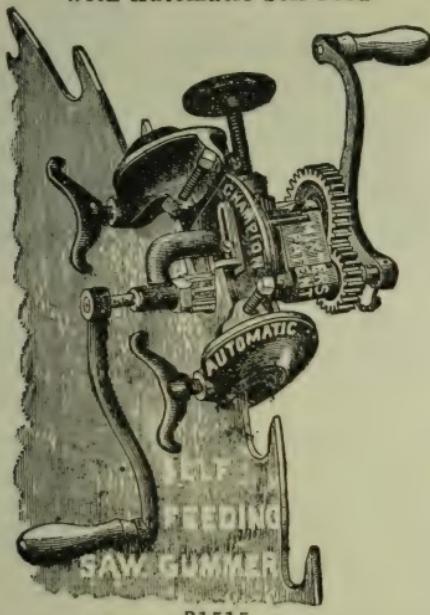
| MILL One Round Edge | | | MILL Two Round Edges | | | TAPERS INCH | | | SLIM TAPERS INCH | | | BANDSAW Blunt and Taper INCH | | | PIT SAW Single Cut INCH | | | CROSS SAW Single Cut INCH | | | HOOKE TOOTH SAW Single Cut INCH | | | | |
|------------------------|--------|--------|-------------------------|--------|--------|----------------|------------|------------|------------------------|------------|------------|------------------------------------|-------|------------|----------------------------------|------------|------------|------------------------------------|------------|------------|---|------------|------------|-------|-------|
| Bastard | 2d Cut | Smooth | Bastard | 2d Cut | Smooth | Single Cut | Double Cut | Single Cut | Double Cut | Single Cut | Double Cut | Reg- ular | Slim | Single Cut | Single Cut | Single Cut | Single Cut | Single Cut | Single Cut | Single Cut | Single Cut | Single Cut | Single Cut | | |
| 4 | 3.40 | 3.90 | 4.40 | 4.40 | 4.90 | 3 | 2.10 | 2.50 | 2.10 | 2.50 | 2.50 | 2.50 | 2.50 | 4 | 4.80 | 4.30 | 4.80 | 4.30 | 4.80 | 4.30 | 4.80 | 4.30 | 4.80 | 4.30 | |
| 5 | 3.60 | 4.30 | 4.60 | 4.60 | 5.10 | 3 1/2 | 2.10 | 2.50 | 2.10 | 2.50 | 2.50 | 2.50 | 2.50 | 5 | 5.40 | 4.70 | 5.40 | 4.70 | 5.40 | 4.70 | 5.40 | 4.70 | 5.40 | 4.70 | |
| 6 | 3.90 | 4.50 | 5.10 | 4.40 | 5.00 | 5 1/2 | 2.20 | 2.60 | 2.20 | 2.60 | 2.90 | 2.90 | 2.90 | 6 | 6.10 | 5.40 | 6.10 | 5.40 | 6.10 | 5.40 | 6.10 | 5.40 | 6.10 | 5.40 | |
| 7 | 4.40 | 5.20 | 5.50 | 4.90 | 5.80 | 6 1/2 | 2.40 | 3.10 | 2.30 | 3.00 | 3.10 | 3.00 | 3.00 | 7 | 7.00 | 6.10 | 7.00 | 6.10 | 7.00 | 6.10 | 7.00 | 6.10 | 7.00 | 6.10 | |
| 8 | 4.80 | 5.50 | 6.10 | 5.40 | 6.10 | 6.80 | 5 | 2.60 | 3.50 | 2.50 | 3.20 | 3.50 | 3.20 | 3.20 | 8 | 7.50 | 6.40 | 7.50 | 6.40 | 7.50 | 6.40 | 7.50 | 6.40 | 7.50 | 6.40 |
| 9 | 5.50 | 6.50 | 7.10 | 6.10 | 7.30 | 7.50 | 5 1/2 | 3.00 | 4.00 | 2.90 | 3.50 | 4.00 | 3.50 | 3.50 | 9 | 8.50 | 7.80 | 8.50 | 7.80 | 8.50 | 7.80 | 8.50 | 7.80 | 8.50 | 7.80 |
| 10 | 6.30 | 7.20 | 7.90 | 7.00 | 8.00 | 8.80 | 6 | 3.40 | 4.70 | 3.10 | 3.90 | 4.70 | 3.90 | 3.90 | 10 | 9.10 | 8.70 | 9.10 | 8.70 | 9.10 | 8.70 | 9.10 | 8.70 | 9.10 | 8.70 |
| 11 | 7.50 | 8.50 | 9.20 | 8.80 | 9.80 | 10.60 | 7 | 4.30 | 5.60 | 3.80 | 4.50 | 5.60 | 4.50 | 4.50 | 11 | 10.70 | 10.40 | 10.70 | 10.40 | 10.70 | 10.40 | 10.70 | 10.40 | 10.70 | 10.40 |
| 12 | 8.10 | 9.70 | 10.60 | 9.40 | 10.80 | 11.80 | 8 | 5.40 | 6.70 | 4.50 | 5.30 | 6.70 | 5.30 | 5.30 | 12 | 11.80 | 11.50 | 11.80 | 11.50 | 11.80 | 11.50 | 11.80 | 11.50 | 11.80 | 11.50 |
| 13 | 10.60 | 12.00 | 13.20 | 11.80 | 13.40 | 14.60 | 9 | 6.60 | 8.10 | 5.40 | 6.30 | 8.10 | 6.30 | 6.30 | 13 | 12.10 | 11.80 | 12.10 | 11.80 | 12.10 | 11.80 | 12.10 | 11.80 | 12.10 | 11.80 |
| 14 | 12.00 | 13.70 | 14.70 | 13.40 | 15.30 | 16.40 | 10 | 8.10 | 9.70 | 6.40 | 7.50 | 9.70 | 7.50 | 7.50 | 14 | 13.10 | 12.80 | 13.10 | 12.80 | 13.10 | 12.80 | 13.10 | 12.80 | 13.10 | 12.80 |
| 15 | 14.70 | 16.50 | 18.10 | 16.40 | 18.80 | 20.10 | 11 | 10.70 | 12.10 | 8.30 | 9.10 | 12.10 | 9.10 | 9.10 | 15 | 14.70 | 14.40 | 15.50 | 14.40 | 15.50 | 14.40 | 15.50 | 14.40 | 15.50 | 14.40 |
| 16 | 16.50 | 18.50 | 20.10 | 18.40 | 21.00 | 22.40 | 12 | 12.50 | 14.70 | 10.70 | 12.10 | 14.70 | 12.10 | 12.10 | 16 | 15.90 | 15.70 | 17.50 | 15.70 | 17.50 | 15.70 | 17.50 | 15.70 | 17.50 | 15.70 |
| 17 | 20.50 | 22.70 | 24.40 | 22.80 | 25.30 | 27.10 | 13 | 15.90 | 17.50 | 12.50 | 14.70 | 17.50 | 14.70 | 14.70 | 17 | 15.90 | 15.70 | 17.50 | 15.70 | 17.50 | 15.70 | 17.50 | 15.70 | 17.50 | 15.70 |
| 18 | 22.70 | 25.50 | 27.30 | 25.30 | 28.40 | 30.40 | 14 | 18.20 | 20.60 | 13.80 | 15.40 | 20.60 | 15.40 | 15.40 | 18 | 23.90 | 21.50 | 23.90 | 21.50 | 23.90 | 21.50 | 23.90 | 21.50 | 23.90 | 21.50 |

| HORSE RASPS FILE RASPS INCH | | | WOOD FILES INCH | | | WOOD RASPS INCH | | | SHOE RASPS INCH | | | KNIFE INCH | | | | | | | | | |
|-----------------------------------|----------------------|--------|--------------------|-------------|------|--------------------|-------------|---------|--------------------|-------------|---------|---------------|-------------|-------|-------|-------------|--------|--------|--------|--------|-------|
| Plain | Boy like 1/4 Rasp | Tanged | Flat | Hf. Rnd. | Flat | Flat | Hf. Rnd. | Cabinet | Flat | Hf. Rnd. | Cabinet | Flat | Hf. Rnd. | Oval | Flat | Hf. Rnd. | 2d Cut | 2d Cut | 2d Cut | Smooth | |
| 6 | 7 | 8 | 7.40 | 8.10 | 6 | 4.30 | 6.10 | 8.10 | 7.40 | 8.10 | 10.10 | 6 | 8.10 | 8.10 | 9.30 | 10.10 | 4 | 5.40 | 6.10 | 6.70 | 6.40 |
| 7 | 8 | 9 | 8.60 | 9.50 | 7 | 4.80 | 7.00 | 9.30 | 8.60 | 9.30 | 11.70 | 7 | 9.30 | 9.30 | 10.10 | 12.20 | 5 | 6.10 | 6.90 | 7.50 | 7.10 |
| 8 | 9 | 10 | 9.40 | 10.10 | 8 | 5.30 | 7.50 | 10.10 | 9.40 | 10.10 | 12.20 | 8 | 10.10 | 10.10 | 12.20 | 13.70 | 7 | 7.80 | 8.50 | 8.90 | 8.50 |
| 9 | 10 | 11 | 11.40 | 12.20 | 9 | 6.30 | 8.50 | 12.20 | 11.40 | 12.20 | 15.50 | 9 | 12.20 | 12.20 | 13.70 | 13.70 | 8 | 8.50 | 9.10 | 9.50 | 9.10 |
| 10 | 11 | 12 | 12.80 | 13.70 | 10 | 7.00 | 9.10 | 13.70 | 12.80 | 13.70 | 17.50 | 10 | 13.70 | 13.70 | 16.80 | 16.80 | 9 | 9.10 | 10.60 | 11.30 | 10.60 |
| 11 | 12 | 13 | 13.70 | 14.60 | 11 | 8.60 | 10.70 | 16.80 | 13.70 | 16.80 | 18.70 | 11 | 16.80 | 16.80 | 18.70 | 18.70 | 10 | 10.60 | 11.50 | 12.30 | 10.60 |
| 12 | 13 | 14 | 14.70 | 15.60 | 12 | 9.70 | 11.80 | 18.70 | 14.70 | 18.70 | 22.40 | 12 | 18.70 | 18.70 | 22.40 | 22.40 | 11 | 12.20 | 13.70 | 14.60 | 12.20 |
| 13 | 14 | 15 | 15.70 | 17.00 | 13 | 11.80 | 14.10 | 22.40 | 13 | 11.80 | 26.80 | 13 | 22.40 | 22.40 | 29.60 | 29.60 | 14 | 12.20 | 13.70 | 14.60 | 12.20 |
| 14 | 15 | 16 | 16.80 | 17.50 | 14 | 12.50 | 14.80 | 23.20 | 14 | 12.50 | 24.80 | 14 | 24.80 | 24.80 | 29.60 | 29.60 | 14 | 12.20 | 13.70 | 14.60 | 12.20 |
| 15 | 16 | 17 | 17.50 | 18.20 | 15 | 13.30 | 15.50 | 24.80 | 15 | 13.30 | 27.80 | 15 | 27.80 | 27.80 | 33.90 | 33.90 | 14 | 12.20 | 13.70 | 14.60 | 12.20 |
| 16 | 17 | 18 | 18.20 | 19.50 | 16 | 14.80 | 17.00 | 26.80 | 16 | 14.80 | 30.80 | 16 | 30.80 | 30.80 | 36.20 | 36.20 | 14 | 12.20 | 13.70 | 14.60 | 12.20 |
| 17 | 18 | 19 | 19.50 | 21.50 | 17 | 15.80 | 18.00 | 24.70 | 17 | 15.80 | 38.90 | 17 | 38.90 | 38.90 | 42.40 | 42.40 | 14 | 12.20 | 13.70 | 14.60 | 12.20 |
| 18 | 19 | 20 | 20.90 | 23.60 | 18 | 13.60 | 14.80 | 23.90 | 18 | 13.60 | 43.60 | 18 | 43.60 | 43.60 | 46.90 | 46.90 | 14 | 12.20 | 13.70 | 14.60 | 12.20 |

Sizes below 4 inches, not extended, take 4 inch price.
 Half inches not specified, take next higher inch price.
 Dead Smo'th, double the price of Bastard Out.
 Equalings Ball'd, advance 12% per cent.
 Two Round Edges, advance 20 per cent.
 One Round Edge, advance 12% per cent.
 All lengths above those listed, advance 20 per cent on next lower inch price.
 Cuts not specified, made upon regular blanks, advance one inch on respective kinds and nearest cut.

Blunt Files not specified, advance one inch on respective kinds and cuts.
 Single or float Cut not specified, on regular shapes take Double Cut price.
 Equalings Ball'd, advance 20 per cent.
 Two Round Edges, advance 20 per cent.
 Files varying from standard sizes, subject to special prices.

NO. 1 MIXTER PAT. CHAMPION SAW GUMMER
With Automatic Self-Feed



B1515

No. 1. Automatic Self-Feeding Gummer, including three cutters (usual size $\frac{3}{8}$, $\frac{5}{8}$, and 1 inch), grinder, and wrench 39.00
Extra Arbors for $\frac{3}{8}$, $\frac{5}{8}$, and $\frac{3}{4}$ inch cutter net 2.00

It is adjustable to all kinds of saws from largest circular to the smallest in general use, also mill and crosscut saws.

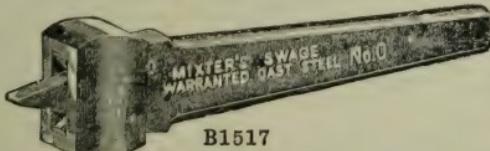


B1516

| Size | inch | $\frac{3}{8}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{5}{8}$ | 1 | $1\frac{1}{8}$ | $1\frac{1}{4}$ | $1\frac{1}{2}$ | $1\frac{3}{4}$ | |
|------------|------|---------------|---------------|---------------|---------------|-----|----------------|----------------|----------------|----------------|------|
| Each..... | | .50 | .50 | .50 | .60 | .70 | .80 | .90 | 1.00 | 1.25 | 1.75 |

MIXTER GUMMER CUTTERS

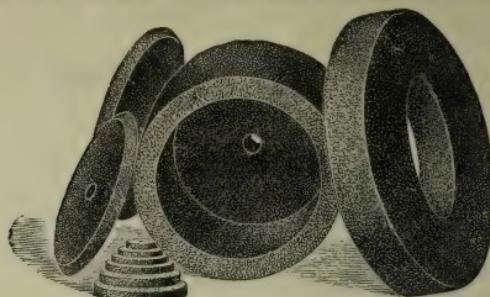
For Mixter's, Standard, I. X. L. Boss and Disston's Gummers. When ordering give make of Gummer.

MIXTER'S DUPLEX SWAGES

B1517

| | |
|--|------|
| No. 3 Duplex Swage, largest size, for saws from 5 to 10 gauge..... | 7.00 |
| No. 2 Duplex Swage, medium size, for saws of from 8 to 12 gauge..... | 6.00 |
| No. 1 Duplex Swage, for all thinner gauges..... | 5.00 |
| No. 0 Duplex Swage, for small thin saws..... | 4.00 |

EMERY AND CORUNDUM WHEELS



B1522

Special Shapes as Illustrated Quoted on Application.

| Diameter Inches | THICKNESS OF WHEELS IN INCHES | | | | | | | | | | | |
|--------------------|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 7/8 | 1 | 1 1/4 | 1 1/2 | 1 3/4 | 2 | 2 1/2 |
| 1 | .25 | .30 | .30 | .35 | .35 | .40 | .40 | .45 | .50 | .55 | .60 | .70 |
| 1 1/2 | .30 | .35 | .40 | .45 | .45 | .50 | .50 | .55 | .60 | .65 | .70 | .80 |
| 2 | .35 | .45 | .50 | .55 | .55 | .60 | .60 | .65 | .70 | .75 | .80 | .90 |
| 2 1/2 | .40 | .55 | .65 | .70 | .75 | .80 | .85 | .95 | 1.05 | 1.15 | 1.25 | 1.45 |
| 3 | .50 | .65 | .80 | .90 | .95 | 1.05 | 1.10 | 1.25 | 1.40 | 1.55 | 1.70 | 2.00 |
| 3 1/2 | .60 | .80 | .95 | 1.05 | 1.15 | 1.25 | 1.35 | 1.55 | 1.75 | 1.95 | 2.15 | 2.55 |
| 4 | .75 | .95 | 1.10 | 1.25 | 1.35 | 1.50 | 1.60 | 1.85 | 2.10 | 2.35 | 2.60 | 3.10 |
| 4 1/2 | .90 | 1.10 | 1.25 | 1.40 | 1.55 | 1.70 | 1.85 | 2.15 | 2.45 | 2.75 | 3.05 | 3.65 |
| 5 | 1.00 | 1.20 | 1.40 | 1.60 | 1.80 | 2.00 | 2.20 | 2.60 | 3.00 | 3.40 | 3.80 | 4.60 |
| 6 | 1.40 | 1.60 | 1.75 | 2.10 | 2.40 | 2.75 | 3.05 | 3.70 | 4.35 | 5.00 | 5.65 | 6.95 |
| 7 | 1.85 | 2.00 | 2.15 | 2.60 | 3.00 | 3.45 | 3.85 | 4.70 | 5.55 | 6.40 | 7.25 | 8.95 |
| 8 | 2.10 | 2.35 | 2.60 | 3.10 | 3.60 | 4.10 | 4.60 | 5.60 | 6.60 | 7.60 | 8.60 | 10.60 |
| 9 | 2.50 | 2.80 | 3.10 | 3.70 | 4.25 | 4.85 | 5.40 | 6.55 | 7.70 | 8.85 | 10.00 | 12.30 |
| 10 | 3.00 | 3.35 | 3.65 | 4.35 | 5.00 | 5.70 | 6.35 | 7.70 | 9.05 | 10.40 | 11.75 | 14.45 |
| 12 | 3.60 | 3.80 | 4.00 | 5.00 | 6.00 | 6.70 | 7.40 | 9.00 | 10.70 | 12.75 | 14.00 | 17.40 |
| 14 | 4.05 | 5.15 | 6.25 | 7.35 | 8.45 | 9.55 | 10.65 | 12.85 | 15.05 | 17.25 | 19.45 | 23.85 |
| 16 | ..... | ..... | ..... | 10.85 | 12.30 | 13.70 | 16.55 | 19.40 | 22.25 | 25.00 | 30.80 | ..... |
| 18 | ..... | ..... | ..... | 13.25 | 15.15 | 17.00 | 20.75 | 24.50 | 28.25 | 32.00 | 39.50 | ..... |
| 20 | ..... | ..... | ..... | ..... | ..... | 20.25 | 24.75 | 29.25 | 33.75 | 38.25 | 47.25 | ..... |

In ordering be sure to state diameter, thickness, shape of face and size of hole of wheel, style of grinder to be used on; kind of grinding it is for, and whether wheel is to be run dry or in water.

HUNTINGTON EMERY
WHEEL DRESSER

B1524

| | |
|---|------|
| Dresser with one Extra Set of Cutters..... | 1.50 |
| Extra Cutters..... per set | .25 |

EMERY

| Number of Grain..... | GRAIN | | FLOUR CF. F. FF. |
|----------------------|---------|-----------|---------------------|
| | 4 to 46 | 54 to 180 | |
| Kegs 350 pounds..... | .05 | .05 1/2 | .03 1/2 |
| 1/2 " " | .05 1/4 | .05 3/4 | .03 3/4 |
| 1/4 " " | .05 1/2 | .06 | .04 |
| 10 pound lots..... | .06 1/2 | .07 | .06 |
| Less quantity..... | .10 | .10 | .08 |

SAND PAPER

Sheets 9 x 11 inches, 24 Sheets in a Package, Half Ream in a Bundle, and Rolls

| Number..... | 00, 0 and ½ F. F. | 1 | 1½ | 2 | 2½ | 3 Ass't |
|---|----------------------------|-------|-------|-------|-------|------------|
| B. A. & Co. list, Per Ream..... | 6.25 | 6.75 | 7.25 | 7.75 | 8.25 | 9.50 |
| Barton | 4.25 | 4.50 | 5.00 | 5.25 | 5.50 | 6.00 |
| B. A. & Co. " Roll, 24 in. (50 yds. long) | 6.75 | 7.25 | 7.75 | 8.50 | 9.25 | 10.25 |
| " " 30 " | 9.00 | 9.50 | 10.00 | 10.50 | 11.00 | 12.00 |
| " " 36 " | 11.00 | 11.50 | 12.00 | 12.50 | 13.25 | 14.25 |
| " " 40 " | 13.25 | 13.75 | 14.25 | 14.75 | 15.50 | 16.75 |
| " " 42 " | 14.25 | 14.75 | 15.25 | 15.75 | 16.50 | 18.00 |
| " " 48 " | 16.50 | 18.00 | 18.50 | 19.25 | 20.00 | 22.00 |
| Barton | 4.50 | 4.75 | 5.25 | 5.75 | 6.25 | 6.75 |
| " " 30 " | 6.50 | 6.50 | 7.00 | 7.50 | 8.00 | 9.00 |
| " " 36 " | 8.00 | 8.00 | 8.25 | 8.50 | 9.00 | 10.00 |
| " " 40 " | 10.00 | 10.00 | 10.25 | 10.50 | 11.00 | 12.00 |
| " Cloth | 8.00 | 8.50 | 9.50 | 10.00 | 10.50 | 11.00 |

EMERY CLOTH AND EMERY PAPER**BAEDER, ADAMSON & CO.'S AND BARTON'S LIST**

Sheets 9 x 11 Inches, One Quire of 24 Sheets in a Package and Rolls

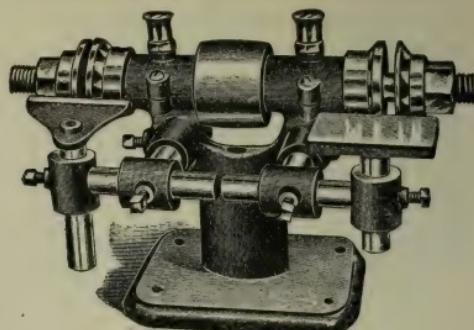
| Number..... | Crocus 00, 0 and ½ F. F. | 00, 0 and ½ F. F. | 1 | 1½ | 2 | 2½ | 3 |
|--|--------------------------------------|----------------------------|-------|-------|-------|-------|-------|
| Cloth, B. A. & Co. list, Per Ream..... | 26.50 | 26.50 | 28.50 | 29.75 | 30.75 | 33.00 | 35.25 |
| " Barton | 18.00 | 18.00 | 20.00 | 21.00 | 22.00 | 23.00 | 24.00 |
| Paper, B. A. & Co. " " ..... | ..... | 9.25 | 11.00 | 11.50 | 12.25 | 14.00 | 16.50 |
| Barton ..... | ..... | 6.00 | 7.00 | 7.50 | 8.00 | 9.00 | 10.50 |
| Cloth, B. A. & Co. 9 in. wide, Per Roll..... | ..... | 9.25 | 10.50 | 11.00 | 11.50 | 12.00 | 13.25 |
| " " 18 " | ..... | 18.50 | 21.00 | 22.00 | 23.00 | 24.00 | 26.50 |
| Barton 9 " " " " | 6.25 | 6.25 | 7.00 | 7.25 | 7.50 | 8.00 | 8.25 |
| " " 18 " " " " | 12.50 | 12.50 | 14.00 | 14.50 | 15.00 | 16.00 | 16.50 |
| Paper, B.A.&Co. 24 " " Per 50 y's | ..... | 10.00 | 11.50 | 12.00 | 12.50 | 14.25 | 17.50 |
| Bartons. 24 " " " " " | 7.00 | 7.00 | 7.50 | 8.00 | 8.50 | 10.00 | 12.00 |

GARNETT PAPER AND CLOTH

In Sheets 9 x 11 Inches, Half Ream in Bundle and 50 Yard Rolls

| Number..... | 00, 0 and ½ F. F. | 1 | 1½ | 2 | 2½ | 3 |
|---------------------------------------|----------------------------|---------|---------|---------|---------|---------|
| B. A. & Co. list. Paper Per Ream..... | 6.50 | 7.00 | 7.50 | 8.00 | 8.50 | 9.75 |
| Barton | 5.50 | 6.00 | 6.50 | 7.00 | 7.50 | 8.00 |
| B. A. & Co. " Roll, 24 in..... | 7.50 | 7.75 | 8.00 | 8.50 | 9.25 | 10.25 |
| " " 30 " | 9.75 | 10.25 | 10.75 | 11.25 | 12.00 | 13.00 |
| " " 36 " | 12.00 | 12.50 | 13.00 | 13.50 | 14.00 | 15.25 |
| " " 40 " | 14.00 | 14.50 | 15.25 | 15.75 | 16.25 | 17.25 |
| " " 42 " | 16.25 | 16.75 | 17.25 | 17.75 | 18.25 | 20.00 |
| " " 48 " | 20.00 | 21.00 | 21.50 | 22.00 | 23.75 | 27.00 |
| Barton | 7.00 | 7.75 | 8.00 | 8.50 | 9.00 | 9.50 |
| " " 30 " | 9.00 | 10.25 | 10.75 | 11.25 | 12.00 | 12.50 |
| " " 36 " | 11.50 | 12.50 | 13.00 | 13.50 | 14.00 | 14.50 |
| " " 40 " | 13.50 | 14.50 | 15.00 | 15.50 | 16.00 | 16.50 |
| " " 42 " | 15.50 | 16.50 | 17.00 | 17.50 | 18.00 | 19.00 |
| " " 48 " | 19.00 | 19.50 | 20.50 | 22.00 | 23.00 | 25.00 |
| Cloth, | 14 " | [13.00] | [13.00] | [13.50] | [14.00] | [15.00] |

EMERY GRINDERS



No. 2 B1528

| | No. 2 For 1½x10 Wheels Price, 10.00 | No. 3 For 3x12 Wheels Price, 15.00 | No. 4 For 2x16 Wheels Price, 20.00 |
|-------------------------------|--|---|---|
| Arbor to Table | 6 ins. | 8 ins. | 9½ ins. |
| Diameter of Base..... | 5¼x6½ " | 9½x6 " | 13x9 " |
| Length of Arbor..... | 14 " | 18 " | 25 " |
| Diameter between Collars..... | ¾ " | 1 " | 1¼ " |
| Diameter of Collars..... | 2½ " | 3½ " | 4 " |
| Bearings..... | 7/8x2 " | 3x1½ " | 5x1½ " |
| Pulley..... | 2½x2 " | 4x3 " | 4¾x4 " |
| Distance between Wheels..... | 7¾ " | 10 " | ... |
| Weight..... | 22 lbs. | 42 lbs. | 85 lbs. |
| Size of Box..... | 8x16x9 ins. | 12x20x8 ins. | 23x14x11 ins |

BLACKSMITHS' TONGS

CURVED LIP
FLUTED JAW
SOLID STEEL

B1530

ROUND JAW

B1531

SINGLE PICK-UP

B1532

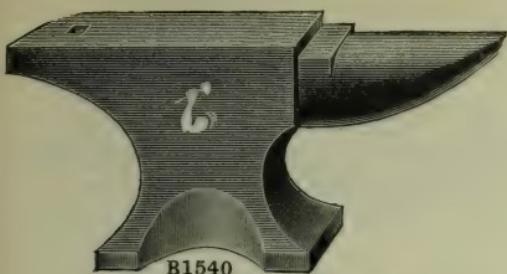
RIVET

B1533

BOLT

B1534

When ordering, state length desired.
Price per pound, 25c.

**ANVILS****PETER WRIGHT ANVILS**

Steel Faced Wrought Anvils
Steel Face Cast Anvils

Prices quoted on application. State approximate size wanted, and what kind, and for what purpose.

BLACKSMITHS' TOOLS.

State Size Shank Wanted

FLATTER



B1541

HARDIE



B1542

SET HAMMER

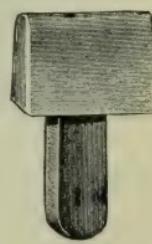


B1543

TOP FULLER



B1544



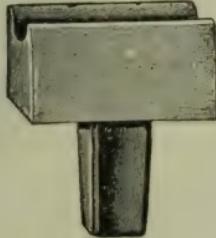
B1545

TOP SWAGE



B1546

BOTTOM SWAGE



B1547

CUTTING CHISELS

Hot



B1548

Cold



B1549

All sizes. Per pound, \$0.40.

Cross Pein



B1550

BLACKSMITHS' SLEDGES

5 pounds or over, per pound, \$0.30.

Sledges can also be furnished with straight pein instead of cross pein.

Double Faced



B1551

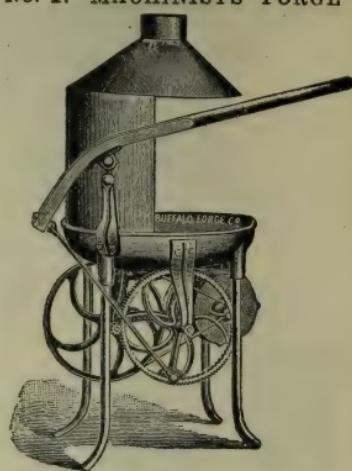
PORTABLE FORGES

No. 0. BLACKSMITHS' FORGE

No. 1. MACHINISTS' FORGE



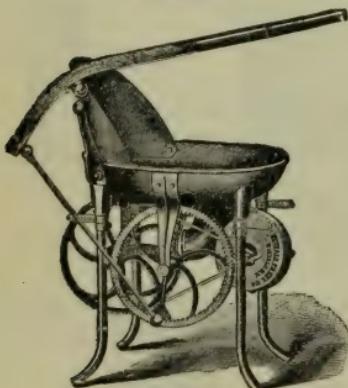
B1552



B1553

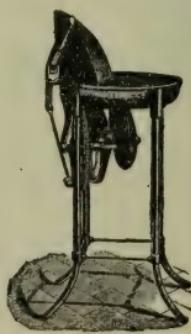
| Number of Forge..... | 0 | 1 |
|--------------------------------|---------|---------|
| Price, without Water Tank..... | 50.00 | 40.00 |
| " with " " | 55.00 | |
| Size of Hearth..... | 32 x 45 | 23 x 35 |
| Height of top of Bowl..... | " 30 | 30 |
| Diameter of Fan..... | " 14 | 12 |
| Weight without Tank..... | 255 | 145 |

No. 3. BOILER MAKERS' FORGE



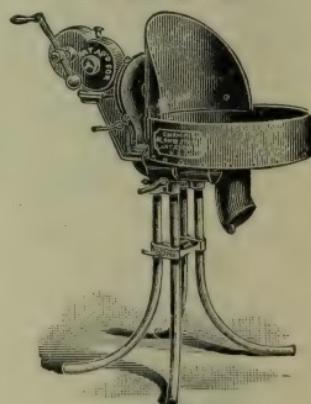
B1554

No. 5. RIVET FORGE



B1556

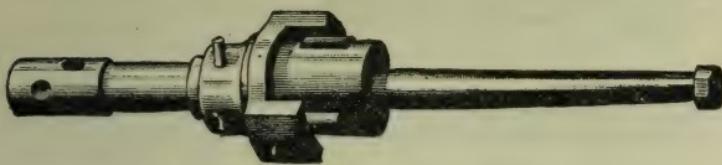
No. 401 RIVET



B1555

| Number of Forge..... | 3 | 4 | 5 | 401 |
|-------------------------------|----------------|-------|-------|-------|
| Price..... | each 36.00 | 27.00 | 24.00 | 35.00 |
| Size of Hearth, diameter..... | inches 21 x 27 | 18 | 18 | 18 |
| Height to top of Bowl..... | " 31 | 33 | 33 | 30 |
| Diameter of Fan | " 10 | 6 | 6 | 9 |
| Weight..... | pounds 140 | 70 | 65 | 90 |

No. 401, if necessary, will produce blast to weld 4-inch iron in ten minutes.

ROLLER TUBE EXPANDER

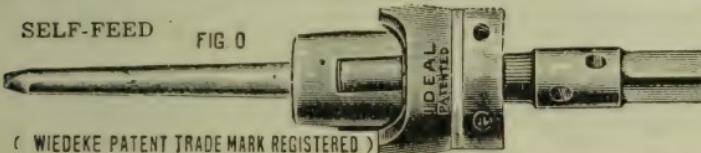
B1560

Boiler Tube Size and Price List

| | | | | | | |
|---------------------|---|-----------------|-----------------|-----------------|-----------------|-----------------|
| Diameter.....inches | 1, 1 $\frac{1}{4}$, 1 $\frac{1}{2}$, 1 $\frac{3}{4}$ and 2 | 2 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | 2 $\frac{3}{4}$ | 3 | 3 $\frac{1}{4}$ |
| Price.....each | 10.00 | 12.00 | 14.00 | 16.00 | 18.00 | 20.00 |
| Diameter.....inches | 3 $\frac{1}{2}$ | 3 $\frac{3}{4}$ | 4 | 4 $\frac{1}{4}$ | 4 $\frac{1}{2}$ | 5 |
| Price.....each | 23.00 | 25.00 | 30.00 | 35.00 | 40.00 | 50.00 |

IDEAL SELF-FEED ROLLER TUBE EXPANDER

Worked by Hand or Reversible Air Drill Without Any Change



B1561

| | | | | |
|---------------------|---|-----------------------|-----------------|-----------------|
| Diameter.....inches | 1, 1 $\frac{1}{4}$ and 1 $\frac{1}{2}$ | 1 $\frac{3}{4}$ and 2 | 2 $\frac{1}{4}$ | 2 $\frac{1}{2}$ |
| Price.....complete | 10.00 | 12.00 | 13.00 | 14.00 |
| Diameter.....inches | 2 $\frac{3}{4}$ | 3 | 3 $\frac{1}{4}$ | 3 $\frac{1}{2}$ |
| Price.....complete | 16.00 | 18.00 | 19.00 | 20.00 |

SPRING TUBE EXPANDER

B1562

| | | | | | | | | | | | | |
|--------------|-------|-----------------|-----------------|-----------------|-------|-----------------|-----------------|-----------------|-------|-----------------|-----------------|-------|
| Size....in. | 1 | 1 $\frac{1}{4}$ | 1 $\frac{1}{2}$ | 1 $\frac{3}{4}$ | 2 | 2 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | 2 $\frac{3}{4}$ | 3 | 3 $\frac{1}{4}$ | 3 $\frac{1}{2}$ | 4 |
| Price ..each | 11.00 | 11.00 | 11.00 | 11.00 | 12.00 | 13.00 | 15.00 | 18.00 | 22.00 | 26.00 | 30.00 | 33.00 |



B1563

BEADING TOOLS

Price each, \$1.50.



B1564

COLD CHISELS

| Number..... | 1 | 2 | 3 | 4 | 5 | 6 |
|--------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Size of Steel.....inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{7}{8}$ | $\frac{1}{2}$ |
| Price.....each | .30 | .35 | .45 | .60 | .70 | .90 |

**ROUND NOSE B1565**Each: $\frac{5}{8}$ in., 75c.; $\frac{3}{4}$ in., 85c.**DIAMOND POINT B1566**Each: $\frac{3}{8}$ in., 75c.; $\frac{1}{4}$ in., 85c.; $\frac{3}{8}$ in., 95c.**CAPE CHISEL B1567**Each: $\frac{5}{8}$ in., 75c.; $\frac{3}{4}$ in., 85c.**WOOD CHISEL B1568**

Each: Blade 1 in., 80c.; 2 in., \$1.50.

**HEAVY YARNING IRON B1569**Each: Point $\frac{1}{16}$ in. or $\frac{1}{8}$ in. thick, 85c.**HEAVY CALKING IRON B1570**

| Number..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Size.....inches | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{7}{8}$ | $\frac{1}{2}$ |
| Each..... | .70 | .70 | .75 | .75 | .80 | .80 | .90 | .90 |

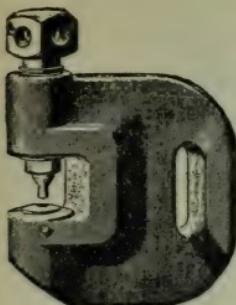
Mueller Calking Iron is $6\frac{1}{4}$ long of $\frac{3}{8}$ Octagon Steel.**FLOOR CHISEL B1571**

3-inch Blade each, \$1.80. 4-inch Blade each, \$2.50.

HOLLOW BRICK DRILL B1572

| Length, and Size Hole | Inches | $12 \times \frac{1}{16}$ | $12 \times \frac{5}{32}$ | $14 \times \frac{3}{16}$ | 16×1 | $18 \times \frac{1}{4}$ |
|-----------------------------|--------|--------------------------|--------------------------|--------------------------|---------------|-------------------------|
| Each..... | | 1.00 | 1.20 | 1.50 | 1.70 | 2.00 |

"Star" Drills (not illustrated) about 25% higher list.



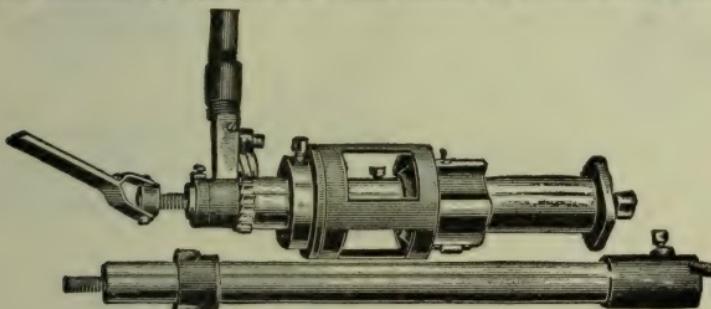
B1576

STEEL SCREW PUNCH

| No. | Punches Hole Inches | In Iron Inches | From Edge of Sheet Inches | Price Each |
|---|------------------------|-------------------|---------------------------------|---------------|
| A | $\frac{5}{16}$ | $1\frac{1}{4}$ | $1\frac{1}{8}$ | 20.00 |
| C | $1\frac{1}{2}$ | $1\frac{5}{8}$ | $1\frac{1}{2}$ | 30.00 |
| D | $\frac{3}{4}$ | $1\frac{1}{2}$ | 2 | 40.00 |
| E | $\frac{23}{32}$ | $3\frac{1}{4}$ | $2\frac{1}{2}$ | 60.00 |
| G | $\frac{3}{4}$ | $3\frac{1}{4}$ | 4 | 80.00 |
| No..... | A | C | D | E |
| Weight..... pounds | 15 | 27 | 40 | 62 |
| Extra Punches and Dies..... per pair | 3.50 | 4.00 | 4.00 | 5.00 |
| | | | | G |

BOILER TUBE CUTTERS

For Cutting off New or Old Tubes Inside or Outside the Head



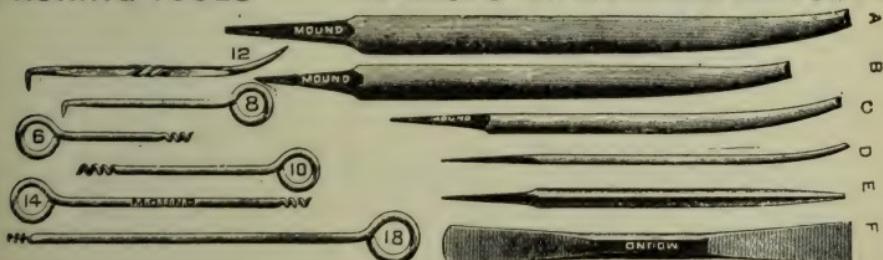
B1577

| | | | | | | | | | | | |
|------------------------|-------|----------------|----------------|----------------|-------|----------------|----------------|-------|----------------|-------|-------|
| Diam. of Tube...Inches | 2 | $2\frac{1}{4}$ | $2\frac{1}{2}$ | $2\frac{3}{4}$ | 3 | $3\frac{1}{4}$ | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ | 5 | 6 |
| Price Each | 14.00 | 14.00 | 14.00 | 16.00 | 20.00 | 20.00 | 22.00 | 22.00 | 30.00 | 32.00 | 32.00 |

Smoke Box Extension 2 to $2\frac{3}{4}$ inch, \$2.50; 3 to $4\frac{1}{4}$ inch, \$3.00.

ENGINEERS' PACKING TOOLS

For Scraping Valves, Journals, Bearings, etc.



B1578

B1579

Price, per set as illustrated, made
of $\frac{1}{16}$, $\frac{1}{8}$ and $\frac{3}{16}$ inch steel, 4, 8,
10, 12, 14, 16, 18, 20, and 24
inches long, Set of 6 pieces.....
Set of 4 pieces.....

2.25
1.50

Price, per set of six scrapers, tem-
pered and polished, packed in
'neat oak case.....
Special Hollow Ground

2.50
3.50

No. 1 TRACK OR TRIP JACK



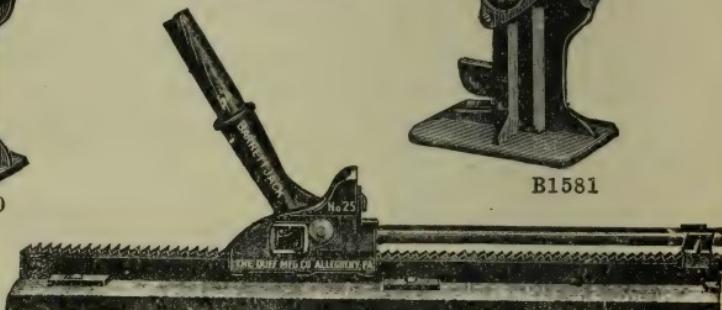
B1580

No. 2 AUTOMATIC LOWERING JACK



B1581

**BARRETT
JACKS**

HORIZONTAL PIPE
FORCING JACK

B1582

Capacity, 15 tons; Total Length, 8½ feet; Travel of Cage, 7½ feet; Weight 185 pounds; Price each, \$40.00

This jack forces pipe ¾ inch to 4 inch sizes, horizontally through the ground, for services running under roadways or walks.

B1580 AND B1581

| Number | Height With Bar Down Inches | Raise of Bar Inches | Lifting Capacity Tons | Size of Bar Inches | Weight Pounds | Price Each |
|--------|-----------------------------------|------------------------|-----------------------------|-----------------------|------------------|---------------|
| ++00 | 12 | 6 | 1 | 3/8 x 1 1/8 | 8 1/4 | 5.00 |
| * 1 | 24 | 13 1/2 | 10 | 1 1/2 x 1 1/2 | 62 | 18.00 |
| + 2 | 21 | 10 | 10 | 1 1/2 x 1 1/2 | 65 | 25.00 |
| + 3 | 26 1/2 | 15 | 12 | 1 3/4 x 1 7/8 | 85 | 30.00 |
| + 4 | 22 | 10 | 15 | 2 x 2 | 100 | 35.00 |
| + 5 | 28 | 15 | 15 | 2 x 2 | 115 | 40.00 |
| * 6 | 31 | 19 | 15 | 1 7/8 x 1 7/8 | 105 | 32.00 |
| + 8 | 11 | 5 | 10 | 1 1/2 x 1 1/2 | 48 | 22.00 |
| + 10 | 24 1/4 | 14 | 10 | 1 1/2 x 1 1/2 | 66 | 25.00 |
| * 12 | 17 3/4 | 8 | 10 | 1 1/2 x 1 1/2 | 50 | 17.00 |
| **17 | 24 | 13 3/4 | 10 | 1 1/2 x 1 1/2 | 63 | 18.00 |
| ++18 | 21 | 10 | 10 | 1 1/2 x 1 7/8 | 68 | 25.00 |
| ++19 | 28 | 17 1/2 | 15 | 2 x 2 | 102 | 35.00 |
| **20 | 31 | 19 | 15 | 1 5/8 x 1 7/8 | 106 | 32.00 |
| + 32 | 20 1/2 | 10 | 10 | 1 5/8 x 1 1/2 | 70 | 25.00 |
| + 50 | 16 | 8 | 5 | 1 1/4 x 1 1/4 | 33 | 16.00 |

†Double Acting Automatic Lowering Jacks.

‡Single Acting Automatic Lowering Jacks.

*Double Acting Trip Jacks. **Single Acting Trip Jacks.

††Double Act. Automobile Jack. ‡Automatic Lowering and Trip Jack combined, No. 10 only.

**JACK SCREWS****CAST-IRON**

B1583

When ordering give diameter of screw and height of stand.

| Height of Stand.... | ...inches | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 24 |
|----------------------------------|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 $\frac{1}{4}$ -inch Screw..... | each | 3.10 | 3.40 | 3.80 | 4.20 | ..... | ..... | ..... | ..... | ..... |
| 1 $\frac{1}{2}$ " | " | 3.75 | 4.25 | 4.75 | 5.25 | 6.00 | ..... | ..... | ..... | ..... |
| 1 $\frac{3}{4}$ " | " | 4.50 | 5.00 | 5.75 | 6.25 | 6.75 | 7.50 | ..... | ..... | ..... |
| 2 " | " | 5.25 | 6.00 | 6.75 | 7.50 | 8.25 | 9.25 | 10.25 | 11.50 | ..... |
| 2 $\frac{1}{2}$ " | " | ..... | 8.75 | 9.75 | 10.75 | 12.00 | 13.25 | 14.50 | 15.75 | 18.25 |
| 3 " | " | ..... | ..... | ..... | ..... | 19.50 | 20.75 | 22.00 | 23.25 | 25.75 |

For height over all closed, add to height of stand 1 $\frac{1}{4}$ -inch screw 2 $\frac{1}{4}$ inches; 1 $\frac{1}{2}$ -inch screw 2 $\frac{1}{2}$ inches; 1 $\frac{3}{4}$ -inch screw 2 $\frac{3}{4}$ inches; 2-inch screw 3 $\frac{1}{4}$ inches; 2 $\frac{1}{2}$ -inch screw 4 inches; 3-inch screw 4 $\frac{1}{2}$ inches.

Capacity: 1 $\frac{1}{4}$ -inch 10 tons; 1 $\frac{1}{2}$ -inch 12 tons; 1 $\frac{3}{4}$ -inch 16 tons; 2-inch 20 tons; 2 $\frac{1}{2}$ -inch 28 tons; 3-inch 36 tons.

Levers, if wanted, are extra.

CANT HOOKS

B1584

With Selected Hickory Handles, Round or Duck Bill Hooks.

| No. | Sizes | Per Dozen |
|-----|---|-----------|
| 246 | 2 $\frac{1}{2}$ in. x 4, 4 $\frac{1}{2}$, 5 or 5 $\frac{1}{2}$ feet handles..... | 25.00 |
| 247 | 2 $\frac{3}{4}$ " x 4, 4 $\frac{1}{2}$, 5 " 5 $\frac{1}{2}$ " | 28.25 |
| 248 | 3 " x 4, 4 $\frac{1}{2}$, 5 " 5 $\frac{1}{2}$ " | 31.25 |

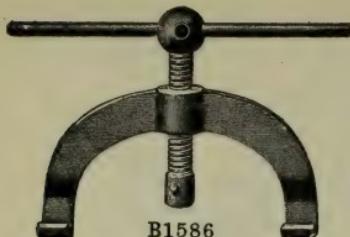
EXTRA HICKORY HANDLES

| Size..... | 2 $\frac{1}{2}$ in. x 4 $\frac{1}{2}$ ft. | 5 ft. | 5 $\frac{1}{2}$ ft. | 6 ft. |
|----------------|---|-------|---------------------|-------|
| Per Dozen..... | 4.00 | 4.30 | 4.70 | 5.10 |

PINCH POINT CROW BARS

B1585

Solid Steel, 10 to 40 lbs. sizes, per lb. 12 cents. Under 10 lbs. or over 40 lbs., per lb. 18 cents.



B1586

SCREW RAIL BENDER OR JIM CROW

Best Wrought-Iron with Machine-Cut Square-Thread Steel Screw

| Number | 00 | 0 | 1 | 2 | 3 | $3\frac{1}{2}$ | 4 |
|-------------------------------------|-------|-------|-------|-------|-------|----------------|-------|
| For Rails up to ... pounds per yard | 16 | 20 | 25 | 50 | 63 | 78 | 95 |
| Price, with Lever | 13.50 | 16.00 | 19.00 | 25.00 | 39.80 | 45.80 | 51.80 |

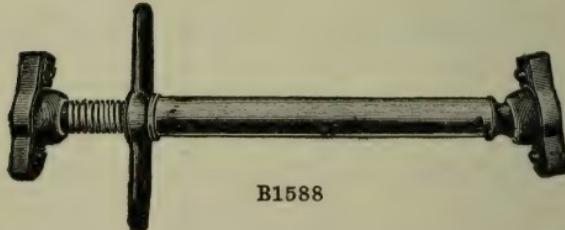
SHELDON CAR MOVER

Price, \$5.00.
Extra Bits, 25c each.

B1587



EXTENSIBLE TRENCH BRACE



B1588

| | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Length closed...inches | 16 | 18 | 21 | 24 | 27 | 30 | 36 | 42 | 48 |
| With $1\frac{1}{2}$ in. Screw or Barrel..doz. | 41.00 | 42.00 | 45.00 | 48.00 | 52.00 | 53.00 | 54.00 | 56.00 | 58.00 |

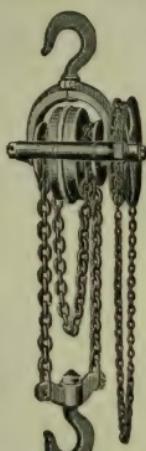
Braces with $1\frac{3}{4}$ inch screws, up to 6 feet length, quoted on application.

Screws only, quoted on application.

MOORE'S CHAIN HOISTS

"CYCLONE"
HIGH SPEED
CHAIN HOIST

B1591

"ANTI-FRICTION"
CHAIN HOIST

B1592

"DIRECT"
DIFFERENTIAL
PULLEY BLOCK

B1593

"CYCLONE," B1591

"ANTI-FRICTION," B1592

| No. | Price Complete | Height of Lift † | Weight Complete with Chains | Chain Pull to Lift Full Load | Ft. of Chain Handled to Lift One Foot | Shortest Dist. Bet'n Hooks | No. | Price Complete with Chain | Height of Lift † | Weight Complete with Chains | Shortest Dist. Bet'n Hooks | Chain Overhauled to Raise One Foot |
|-----|----------------|------------------|-----------------------------|------------------------------|---------------------------------------|----------------------------|-----|---------------------------|------------------|-----------------------------|----------------------------|------------------------------------|
| 30 | 35.00 | 8 ft. | 62 lbs. | 63 lbs. | 19 ft. | 20 in. | 0 | 25.00 | 7 ft. | 39 lbs. | 16 in. | 38 ft. |
| 31 | 45.00 | 8 " | 85 " | 85 " | 29½ " | 22 " | 1 | 30.00 | 8 " | 73 " | 20 " | 47 " |
| 31½ | 60.00 | 8 " | 107 " | 109 " | 35 " | 24 " | 1½ | 40.00 | 8½ " | 90 " | 21 " | 59 " |
| 32 | 70.00 | 9 " | 133 " | 126 " | 39½ " | 26 " | 2 | 50.00 | 9 " | 128 " | 23 " | 65 " |
| 33 | 90.00 | 10 " | 195 " | 115 " | 69 " | 31 " | 3 | 70.00 | 10 " | 195 " | 29 " | 108 " |
| 34 | 110.00 | 10 " | 250 " | 115 " | 91 " | 36 " | 4 | 95.00 | 11 " | 250 " | 32 " | 120 " |
| 35 | 140.00 | 12 " | 386 " | 104 " | 123 " | 40 " | 5 | 125.00 | 12 " | 353 " | 36 " | 166 " |
| 36 | 165.00 | 12 " | 402 " | 109 " | 140 " | 42 " | 6 | 150.00 | 12 " | 400 " | 37 " | 168 " |
| 38 | 200.00 | 12 " | 464 " | 130 " | 159 " | 45 " | 8 | 200.00 | 12 " | 580 " | 41 " | 240 " |
| 310 | 240.00 | 12 " | 610 " | 129 " | 191 " | 48 " | 10 | 250.00 | 12 " | 625 " | 41 " | 258 " |

Larger sizes quoted on application.

†Figures in this column denote approximate height which blocks, with regular length of chain, will lift from level on which operator stands.

For every additional foot of lift desired, two feet extra of both main and hand chain will be necessary.

"DIRECT" DIFFERENTIAL PULLEY BLOCK—B1593

| Number | Capacity | Will Lift | Price | Regular Chain | Extra Chain Per Foot | Weight with Chain | Shortest Dist Bet'n Hooks |
|--------|----------|-----------|-------|---------------|----------------------|-------------------|---------------------------|
| 000 | ¼ ton | 6 feet | 18.00 | 22 feet | .70 | 20 lbs. | 17 inches |
| 00 | ½ " | 7 " | 21.00 | 26 " | .70 | 31 " | 21 " |
| 11 | 1 " | 8 " | 28.00 | 30 " | .75 | 53 " | 26 " |
| 11½ | 1½ " | 8½ " | 36.00 | 33 " | .80 | 90 " | 32 " |
| 12 | 2 " | 9 " | 45.00 | 36 " | .85 | 128 " | 39 " |
| 13 | 3 " | 10 " | 60.00 | 58 " | 1.00 | 167 " | 44 " |

Allow four feet of chain for each additional foot of lift.

REGULAR PATTERN TACKLE BLOCKS

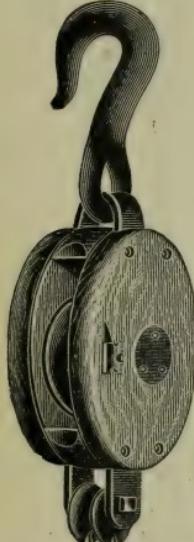
With Loose Side Hooks

Single
With Becket

WOOD BLOCKS

Triple
Without BecketSnatch Block
with Swivel Hook

METAL BLOCKS

Also Made
Triple and Snatch
Single Double

B1594



B1596



B1597



B1598



B1599

B1595, Double Block, Not Illustrated.

B1600, Triple Block,
B1600 $\frac{1}{2}$, Snatch Block,
Not Illustrated.

Any of above Blocks can be furnished either of **Wood** or of **Metal**.
(For **Wire Rope Blocks**, see Wire Rope and Attachments, Index.)

PRICE LIST WOOD AND METAL TACKLE BLOCK

When ordering, always state whether wanted with Becket or without Becket.

| | | | | | | | | | | | |
|----------------------|------|---------------|---------------|---------------|---------------|------|----------------|----------------|----------------|----------------|----------------|
| Size Block | in. | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 12 | 14 | 15 |
| " Rope, Wood Block " | | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{7}{8}$ | 1 | 1 | $1\frac{1}{8}$ | $1\frac{1}{4}$ | $1\frac{1}{8}$ | $1\frac{1}{2}$ |
| " Metal " " | | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{7}{8}$ | 1 | $1\frac{1}{8}$ | $1\frac{1}{4}$ | $1\frac{1}{8}$ | $1\frac{1}{2}$ | .... |
| Single Block | each | .85 | .90 | 1.10 | 1.30 | 1.65 | 1.85 | 2.75 | 4.45 | 7.00 | 8.00 |
| Double " " | | 1.60 | 1.75 | 2.00 | 2.40 | 2.85 | 3.40 | 4.50 | 7.50 | 10.50 | 13.00 |
| Triple " " | | 2.15 | 2.25 | 2.90 | 3.50 | 4.25 | 4.75 | 6.25 | 10.65 | 15.00 | 18.00 |

Blocks with **Loose Swivel Hooks**, at special price.

Roller-Bushed and Bronze-Bushed Self-Lubricating blocks can be furnished at special price.

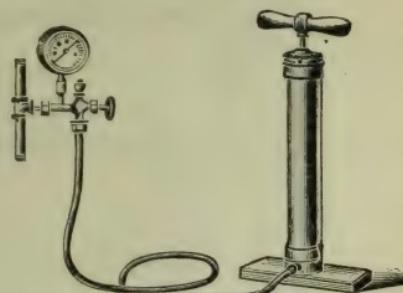
Thick Mortise Blocks, with Hooks or Shackles, with or without **Becket** for 1-inch to 2-inch rope, quoted on application.

PRICE LIST WOOD AND METAL SNATCH BLOCK

| | | | | | | | | |
|----------------------|-----|-------------------------------|---------------------------------|----------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Size Block | in. | 7 | 8 | 9 | 10 | 12 | 14 | 16 |
| " Rope, Wood Block " | | $\frac{7}{8}$ | 1 | $1\frac{1}{8}$ | $1\frac{1}{4}$ | $1\frac{1}{2}$ | $1\frac{1}{4}$ | 2 |
| " Metal " " | | $\frac{7}{8}$ & $\frac{7}{8}$ | $1\frac{1}{8}$ & $1\frac{1}{8}$ | .... | $1\frac{1}{4}$ & $1\frac{1}{8}$ | $1\frac{1}{2}$ & $1\frac{1}{8}$ | $1\frac{1}{4}$ & $1\frac{1}{8}$ | $2\frac{1}{2}$ & $2\frac{1}{4}$ |
| Each | | 4.75 | 5.75 | 6.75 | 8.50 | 10.00 | 13.00 | 17.00 |

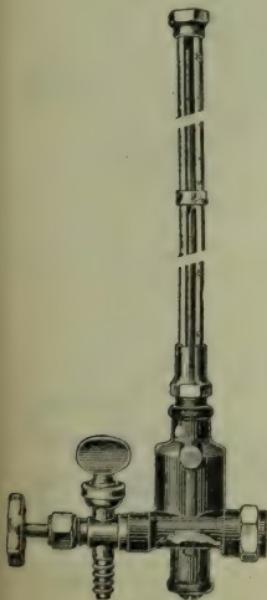
GAS PROVING PUMPS**WITH MERCURY GAUGE**

B1620

WITH SPRING GAUGE

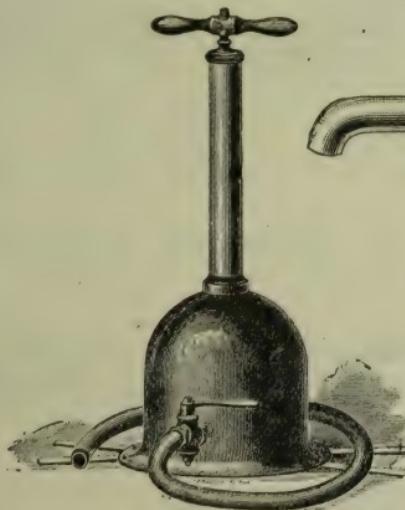
B1621

| Pump and Mercury Gauge Complete | Pump and Spring Gauge Complete | Pump Only | Mercury Gauge Complete | Spring Gauge Complete |
|---------------------------------|--------------------------------|-----------|------------------------|-----------------------|
| 23.00 | 28.00 | 13.00 | 10.00 | 15.00 |

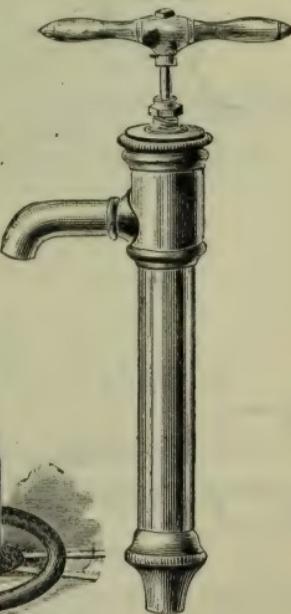
**FEATHERS
MERCURY
COLUMN**

B1625

Each, \$20.00.

**GAS
SERVICE
CLEANER**

B1626

Each, \$40.00.
Hose is extra.**GAS
DRIP
PUMP**

B1627

Each, \$35.00.

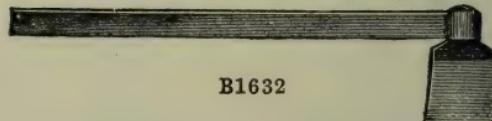
Note. The Mercury cannot be lost from a Feather Column.

SOLDERING COPERS**POINTED PATTERN**

B1630

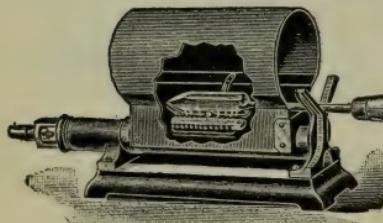
FLAT PATTERN

B1631

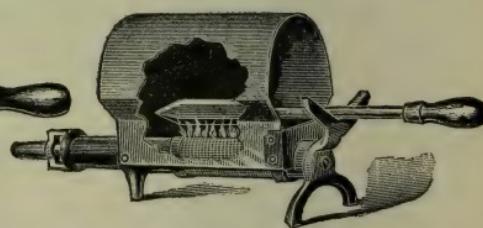
SWIVEL HATCHET PATTERN

B1632

| | | | |
|---------------------------|--|---------|-----|
| Pointed, Weight per pair: | 1, 1½, 2, 2½, 3, 4, 5, 6, 7, 8, 9, 10, 12, lbs.. | per lb. | 50c |
| Flat, | 2, 3, 4, 5, 6, 7, 8..... | " | 50c |
| Hatchet..... | | " | 50c |

GAS SOLDERING COPPER HEATERS

B1635



B1636

Each..... \$1.75 Each..... \$1.25

Price does not include soldering copper.

TINNERS' SNIPS**BEGULAR PATTERN**

B1637

CURVED LIP

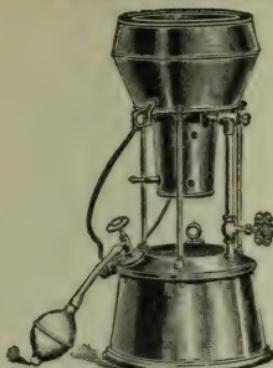
B1638

| Number | 10 | 9 | 8 | *8L | 7 | 6½ |
|-------------------------------------|------|------|------|------|------|------|
| Length of cut..... inches | 2½ | 3 | 3½ | 3½ | 4 | 4½ |
| Price Regular Pattern..... per pair | 1.40 | 1.50 | 2.00 | 2.75 | 2.50 | 3.00 |

" Curved Lip... " "

*No. 8L Left Hand, for left-handed persons.

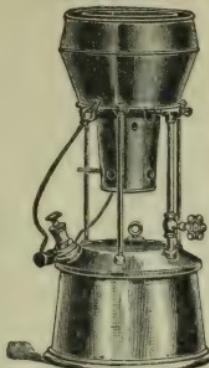
WITH RUBBER BULB



B1640

Price, \$6.00.

WITH PUMP



B1641

Price, \$7.50.

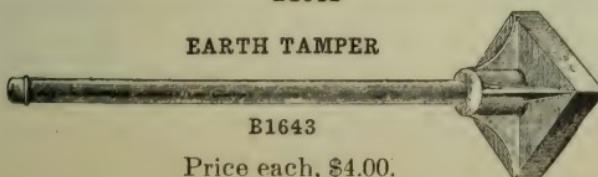
GASOLINE
FURNACES

Price includes one sheet iron hood only.

| | | | | |
|----------------------|------------------------|------------------|-----------------|----------------------|
| <i>Burner</i> | <i>Connecting Pipe</i> | <i>Coil</i> | <i>Coil Cup</i> | <i>Ell</i> |
| | | | | |
| EACH .10¢ | EACH .08¢ | EACH .40¢ | EACH .30¢ | EACH .6¢ |
| <i>Filling Screw</i> | <i>Handle Ear</i> | <i>Handle</i> | <i>Nuts</i> | <i>Valve</i> |
| | | | | |
| EACH .15¢ | EACH .8¢ | EACH .25¢ | EACH .2¢ | EACH .45¢ |
| <i>Air Valve</i> | <i>Plug</i> | <i>Reservoir</i> | <i>Bulb</i> | <i>Shield</i> |
| | | | | |
| EACH .30¢ | EACH .6¢ | EACH .180 | EACH .35¢ | EACH .50¢ |
| <i>No 3 Shield</i> | <i>Tee</i> | <i>Top Plate</i> | <i>Upright</i> | <i>Wire for Coil</i> |
| | | | | |
| EACH \$1.00 | EACH .6¢ | EACH .20¢ | EACH .8¢ | EACH .05¢ |

B1642

EARTH TAMPER



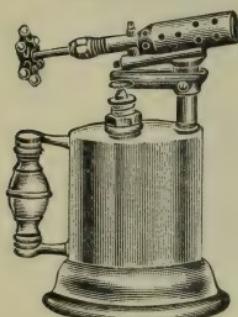
B1643

Price each, \$4.00.

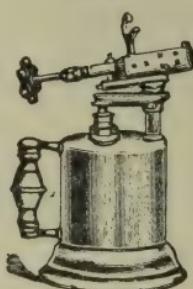
GASOLINE BLOW TORCHES

ALCOHOL TORCH AND BLOW PIPE

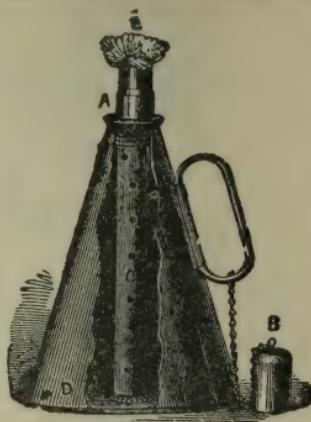
Regular



B1644

With
Solder Copper
Holder

B1645



B1646

1 Pint, each, \$4.50. 1 Pint, each, \$5.00
1 Quart, each, \$5.00. 1 Quart, each, \$6.00

Brass Torch, \$1.00
Tin, \$0.75, each.
Blow Pipe, 40c each.

SOLDER POTS

B1647



| Diameter..... inches | 5 | 6 | 8 | 10½ | 13½ |
|----------------------|-----|-----|------|------|------|
| Each..... | .50 | .60 | 1.40 | 2.00 | 3.80 |

MALLEABLE IRON MELTING LADLES



B1648

| Diameter of Bowl..... inches | 2½ | 3 | 4 | 5 | 6 |
|------------------------------|-----|-----|-----|-----|-----|
| Price..... each | .30 | .40 | .50 | .60 | .80 |

CAST-IRON POURING LADLE
For 1-Inch Pipe Handle



B1649

Capacity, 1 Quart; each, \$1.50.

POURING POT



B1651

12 Inch, each, \$3.50.

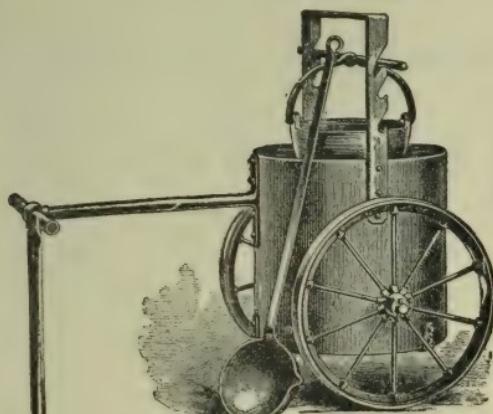
LEAD MELTING FURNACES

ON LEGS



B1655

ON WHEELS



B1656

| Diameter Inches | Grate Inches | Diameter of Pot Inches | Capacity of Pot Lead Pounds | Diameter of Ladle Inches | Capacity of Ladle Lead Pounds | Price Complete on Legs Each | Price Complete on Wheels Each |
|--------------------|-----------------|------------------------------|--------------------------------------|--------------------------------|--|--------------------------------------|--|
| 18 | 16½ | 13½ | 200 | 6 | 15 | 50.00 | 60.00 |
| 24 | 22 | 15 | 450 | 8 | 26 | 60.00 | 70.00 |

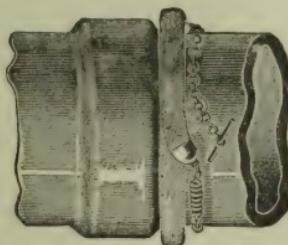
ASBESTOS JOINT RUNNERS

SQUARE



B1658

ROUND



B1659

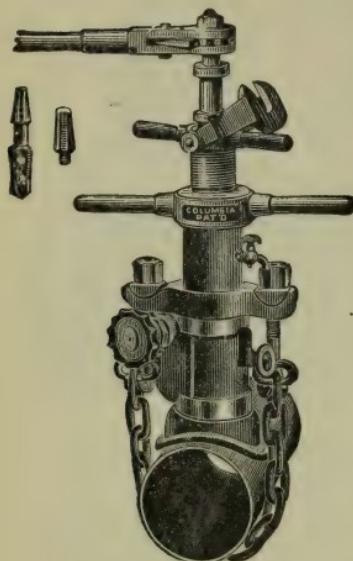
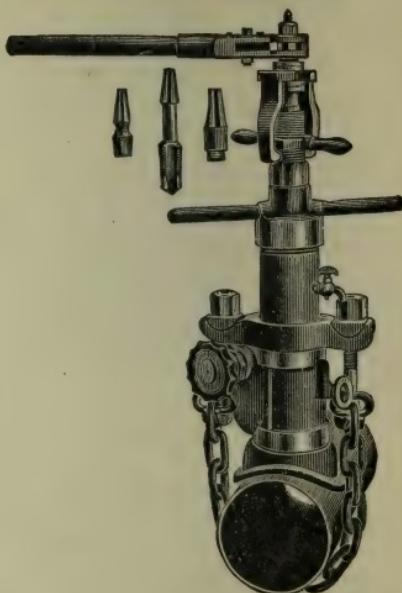
WITH CLAMP



B1660

| Number..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-------------------|------|------|------|-------|------|-------|-------|-------|-------|-------|
| Size.....inches } | 2 to | 4 to | 6 to | 10 to | 8 to | 10 to | 16 to | 24 | 30 | 36 |
| For Pipe..... " | 4 | 6 | 10 | 14 | 12 | 14 | 20 | | | |
| Square .....each | ¾ | ¾ | 1 | 1 | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ | 1¼ |
| Round" | 1.25 | 1.50 | 2.25 | 3.00 | 4.00 | 5.00 | 6.75 | 7.75 | 8.75 | 9.75 |
| Pipe .in. | 2 | 3 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 20 |
| W. Clamp | 3.00 | 4.40 | 4.70 | 6.00 | 8.00 | 9.00 | 10.00 | 11.00 | 12.00 | 14.00 |
| | | | | | | | | | | 17.00 |
| | | | | | | | | | | 19.00 |
| | | | | | | | | | | 22.00 |

Larger sizes quoted on application.

MUELLER WATER PIPE TAPPING MACHINES**COLUMBIA****B1664****ORIGINAL****B1665**

| | | | |
|---------------|-------|---------------|--------|
| Complete..... | 90.00 | \|\| Complete..... | 100.00 |
|---------------|-------|---------------|--------|

PRICE INCLUDES

One each combined Drill and Tap, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, and 1 inch.

One each Screw or Hexagon Plug, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, and 1 inch.

Four Malleable Iron Saddles, any size.

One Chain for any size Pipe.

**EXTRA COMBINED DRILLS AND TAPS FOR MUELLER
AND COLUMBIA MACHINES**

| Size..... | inches | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | 1 |
|------------------|--------|---------------|---------------|---------------|------|
| Price each | | 4.00 | 4.50 | 5.50 | €.50 |

| Extra Plugs, Saddles and Gaskets | For Mueller Machine | For Columbia Machine |
|---|------------------------|-------------------------|
| Price, Hexagon or Screw Plugs, any size. each | .80 | .80 |
| " Malleable Iron Saddles, any size.. " | 1.00 | 1.00 |
| " Small Rubber Gaskets..... " | .40 | .40 |
| " Large Rubber Gaskets..... " | 1.50 | 1.50 |

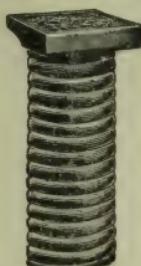
Power Clevis for Mueller Machine, \$5.00 extra.

Power Clevis for Columbia Machine, \$5.00 extra.

Dry Pipe Tapping Machines, quoted on application.

VALVE BOXES FOR WATER AND GAS**VALVE BOX**

B1700

**SQUARE HEAD FOR
VALVE BOX**

B1701

EXTENSION SECTION

B1702

Increases Box 14 inches
Price, each, \$1.00.

REGULAR COVERS

B1703



B1704

**FLANGED
COVER**

B1705

**LOCK
COVER**

B1706

Each, \$1.00.

Each, \$1.00.

Each, \$1.00.

VALVE BOXES

5½-Inch Shaft, No. 6 Base

| Number | AAA | AA | A | B | C | CC |
|----------------------|-------|-------|-------|-------|-------|-------|
| Extension.....inches | 17 | 22-28 | 28-40 | 36-48 | 42-54 | 48-60 |
| Price .....each | 3.25 | 3.80 | 4.00 | 4.20 | 4.40 | 4.65 |
| Number | D | DD | E | F | G | H |
| Extension.....inches | 42-66 | 48-72 | 60-72 | 60-84 | 72-84 | 72-96 |
| Price .....each | 4.85 | 5.10 | 5.25 | 5.50 | 5.75 | 6.00 |

Square Head Valve Boxes, same price as above.

SPECIAL BASES FOR VALVE BOXES

| Style of Base.. | No. 4, Round For 4-inch Valves | No. 6, R'nd or Oval For 6 and 6-Inch Valves | No. 8, Round For 10-Inch Round Valves and Smaller | No. 16, Round For 12-Inch or 16-Inch Round Valves | No. 160, Oval For 10, 12, and 16-Inch Oval Valves | No. 162, Oval For 18 to 24-inch Oval Valves |
|--------------------|---|---|--|--|--|--|
| | Deduct from Net Price of Box | Incl'ded in Net Price of Box | Add to Net Price of Box | Add to Net Price of Box | Add to Net Price of Box | Add to Net Price of Box |
| Price, each | .25 | ..... | .25 | 1.50 | .35 | 1.25 |

Length of box is changed by using following bases: No. 4 reduces 3 inches, No. 16 increases 4 inches, and No. 160 reduces 6 inches.

EXTENSION SERVICE BOXES
2½ INCH DIAMETER FOR WATER AND GAS
COVERS, KEYS AND BOLTS



B1711



B1712



B1713 B1714 B1715



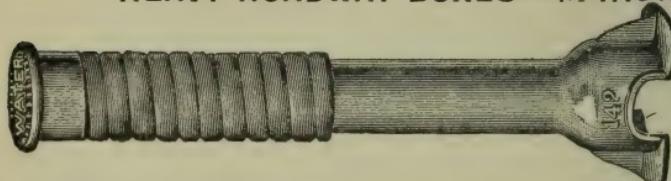
B1710

| Size | Extension | Price |
|---------|------------------------------------|-------|
| No. 88 | 1 ft. stationary length..... Each | .55 |
| " 89 A | 1 " to 1 ft. 8 inches" " | .60 |
| " 90 B | 1 " 6 inches to 2 ft. 2 inches.. " | .65 |
| " 91 C | 1 " 9 " " 9 " .. " | .70 |
| " 92 C | 2 " to 3 ft. 2 inches | .73 |
| " 92 D | 2 " " 6 " | .75 |
| " 93 D | 3 " to 4 ft. | .80 |
| " 93 E | 3 " " 6 inches | .83 |
| " 94 D | 3 " 6 inches to 4 ft. 9 inches.. | .85 |
| " 94 E | 3 " " 5 " | .90 |
| " 95 E | 4 " to 5 ft. 6 inches | 1.00 |
| " 100 E | 4 " 6 inches to 6 ft. | 1.05 |
| " 100 F | 4 " " 6 inches.. " | 1.10 |

Extension Sections for above, to increase length of box 9, 16½, 28 and 36 inches, quoted on application.

Always state whether for water or gas, when ordering. Boxes with large base for 2 inch cocks at special price, or use Roadway Boxes bottom of page.

HEAVY ROADWAY BOXES—4½-INCH SHAFT

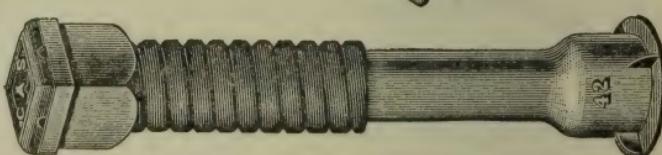


ROUND TOP
OPEN BASE
B1720.

Also if with
Flanged Base,
B1721.

SQUARE TOP
FLANGED BASE
B1722.

Also if with Open
Base, B1723.



Extra Covers for Boxes, same as B1703, etc.

ROUND HEAD, OPEN BASE AND FLANGED BASE

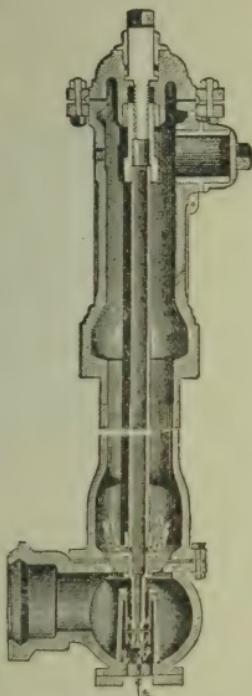
| Number..... | 141 Pd. | 142 Rd. | 142 R. I. | 143 Rd. | 144 Rd. | 145 Rd. |
|----------------------|---------|---------|-----------|---------|---------|---------|
| Extension.....inches | 18-24 | 27-34 | 27-42 | 34-48 | 39-54 | 46-60 |
| Price .....each | 2.45 | 2.5 | 2.95 | 3.10 | 3.20 | 3.30 |

SQUARE HEAD, FLANGED BASE AND OPEN BASE

| Number | 137 Sq. | 138 Sq. | 140 Sq. | 141 Sq. | 142 Sq. | 143 Sq. |
|----------------------|---------|---------|---------|---------|---------|---------|
| Extension.....inches | 12 | 16 | 18-24 | 21-31 | 27-36 | 31-42 |
| Price.....each | 2.20 | 2.35 | 2.50 | 2.60 | 2.80 | 2.95 |

ECLIPSE
No. 3 and No. 6**SECTIONAL**

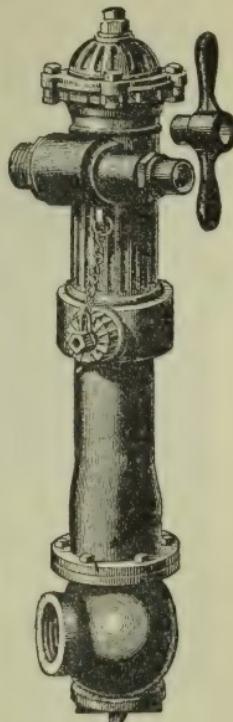
B1725



B1726



B1727



B1728

ECLIPSE No. 3 REGULAR CITY FIRE HYDRANT

| Diam. of Inlet Pipe | Pavement to Center of Inlet | One $2\frac{1}{2}$ -in. Hose Nozzle | Two $2\frac{1}{2}$ -in. Hose Nozzles | Three $2\frac{1}{2}$ -in. Hose Nozzles | One Steamer Nozzle | One Steamer and one $2\frac{1}{2}$ -in. Nozzle | One Steamer and two $2\frac{1}{2}$ -in. Nozzles | Frost Case Standard Length | Each ft. in Length of Standard Pipe, Extra | Each ft. in length of Frost Case, Extra |
|---------------------|-----------------------------|-------------------------------------|--------------------------------------|--|--------------------|--|---|----------------------------|--|---|
| 4 in. | 5 ft. | 32.00 | 34.00 | 36.00 | 34.00 | 35.00 | 33.00 | 7.00 | 1.50 | 1.00 |
| *5 " | " | 38.00 | 40.00 | 42.00 | 40.00 | 42.00 | 44.00 | 8.00 | 1.75 | 1.50 |
| *6 " | " | 47.00 | 49.00 | 51.00 | 49.00 | 51.00 | 53.00 | 10.00 | 2.25 | 2.00 |

*The 6-inch Eclipse Hydrant is Extra Heavy. Hydrants over 7 feet bury are at special price. Eclipse Hydrants have Rubber Valve and close against the pressure.

ECLIPSE No. 2, FOR PRIVATE CORPORATIONS

| To Set in Ground | feet | 1 $\frac{1}{2}$ | 2 | 3 | 4 | 5 | 6 |
|--|------|-----------------|-------|-------|-------|-------|-------|
| 1 $\frac{1}{4}$ -inch Inlet and Outlet | each | 11.85 | 12.00 | 12.30 | 12.65 | 13.00 | 13.50 |
| 1 $\frac{1}{2}$ " " " " | " | 16.30 | 16.45 | 16.80 | 17.15 | 17.50 | 18.00 |
| 2 " " " " | " | 22.25 | 22.50 | 23.00 | 23.50 | 24.00 | 24.75 |

ECLIPSE No. 4, FOR SPRINKLING PURPOSES

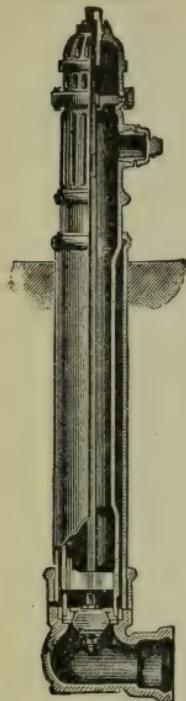
Has Valve on Outlet

| To Set in Ground | each | 1 $\frac{1}{2}$ | 2 | 3 | 4 | 5 | 6 |
|--------------------------------|------|-----------------|-------|-------|-------|-------|-------|
| 2 -inch Inlet and Outlet | each | 28.25 | 28.50 | 29.00 | 29.50 | 30.00 | 30.75 |
| 2 $\frac{1}{2}$ " " " " | " | 32.25 | 32.50 | 33.00 | 33.50 | 34.00 | 34.75 |

This Outlet Valve on No. 4 does away with necessity of shutting off the Hydrant Valve frequently and consequent waste of water.

See Instructions for Ordering, next page.

MATTHEWS



FIRE HYDRANTS

NOTE.—When ordering Hydrants, specify whether Single or Double-Valve Hydrants are required.

For size of Hydrant, specify classified size, the diameter of valve opening, stand pipe, and connecting pipe.

State depth from pavement to bottom of pipe, to ensure getting the right length of Hydrant.

Send hose-gauge (part of coupling will answer), so that the Hydrant-nozzle may be accurately fitted to it.

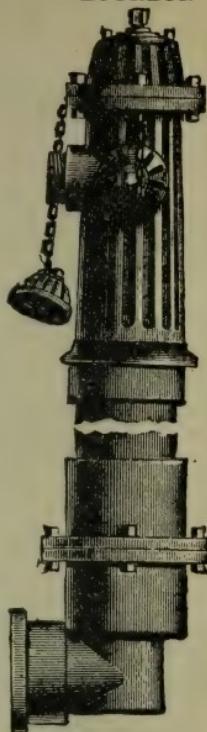
State size of pipe the Hydrants are to connect with, and whether Hub, Flange, or some other style connection.

If other Hydrants are in use, state if they open by turning to the right or left, and give size and shape of nut for wrench.

For new places, unless otherwise specified, Hydrants are made to open by turning to the left.

B1730

B1737



MATTHEWS FIRE HYDRANTS WITH SLIDING FROST CASE

| Classified Size | Pavement to Center of Inlet | One 2½-Inch Hose Nozzle | Two 2½-Inch Hose Nozzles | Three 2½-Inch Hose Nozzles | One Steamer Nozzle | One Steamer and One 2½-Inch Hose Nozzle | One Steamer and Two 2½-Inch Hose Nozzles | For each Add'l Ft. in Length of Frost Case add |
|-----------------|-----------------------------|-------------------------|--------------------------|----------------------------|--------------------|---|--|--|
| 4 inches | 5 ft. | 32.00 | 34.00 | .... | .... | .... | .... | 1.00 |
| 4½ " | 5 " | .... | 38.00 | .... | 38.00 | 40.00 | 42.00 | 1.00 |
| 5 " | 5 " | .... | 44.00 | 46.00 | 44.00 | 46.00 | 48.00 | 1.00 |
| 6 " | 5 " | .... | 50.00 | 52.00 | 50.00 | .... | 54.00 | 1.00 |

MATTHEWS SPECIAL DOUBLE VALVE HYDRANT

Add to List Price, 4 feet and 4½ feet, \$12.00; 5 feet and 6 feet, \$15.00.

The lower valve is so constructed that it acts as a supplemental or auxiliary valve, to allow the Hydrant to be taken up without shutting off the water from the district.

Patent Independent Nozzle Cut-off—Add to list for ordinary 2½-inch Nozzle \$6.00 per nozzle; for Steamer 4-inch Nozzle, \$9.00 per nozzle.

BOURBON PATENT FIRE HYDRANTS

| Valve Opening | Diameter Stand Pipe | Pavement to Bottom of Inlet | One 2½ Inch Discharge | Two 2½ Inch Discharge | Steamer | Steamer and One 2½ Inch | Steamer and Two 2½ Inch | Extra for Each Additional Foot Length |
|---------------|---------------------|-----------------------------|-----------------------|-----------------------|---------|-------------------------|-------------------------|---------------------------------------|
| 2 inches | 3 in. | 5 ft. | 17.00 | .... | .... | .... | .... | .50 |
| 3 " | 4 " | 5 " | 21.50 | .... | .... | .... | .... | .75 |
| 4 " | 5 " | 5 " | 32.00 | 34.00 | .... | .... | .... | 1.00 |
| 4½ " | 5½ " | 5 " | .... | 36.00 | 36.00 | 38.00 | 40.00 | 1.00 |
| 5 " | 6 " | 5 " | .... | 41.00 | 41.00 | 43.00 | 45.00 | 1.00 |

Hydrants 6 inches longer than even feet, charged at price of next even foot.

A frost case with this hydrant not necessary.

WATER METERS

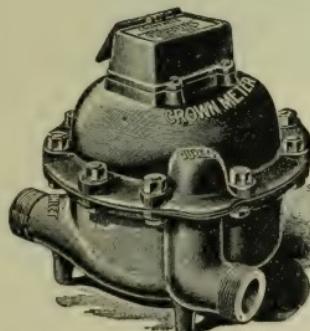
EMPIRE

CROWN

With Straight Reading Register



B1738



B1739

EMPIRE WATER METER

| Size..... |inches | $\frac{1}{2}$ or $\frac{5}{8}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{2}$ | 2 | 3 | 4 | 6 |
|----------------------------------|-------------|--------------------------------|---------------|-------|----------------|--------|-----------------------------------|--------|------|
| Greatest Proper { Cubic Feet | | 2 | 4 | 8 | 12 | 20 | .... | .... | .... |
| Quantity per minute } ...Gallons | | 15 | 30 | 60 | 90 | 150 | .... | .... | .... |
| Price..... | 13.34 | 20.00 | 26.67 | 53.34 | 80.00 | 133.34 | 300.00 | 533.34 | |
| Connections.....per set | .54 | .80 | 1.07 | | | | Flanges furnished without charge. | | |

Connections are made only for $\frac{1}{2}$ or $\frac{5}{8}$, $\frac{3}{4}$ and 1-inch meters, and are always sent with these sizes, unless otherwise instructed. These sizes are made with male threads, while the $1\frac{1}{2}$ -inch meters have female threads. All threads are cut to fit standard pipe.

CROWN WATER METER—B1739

| Size..... |inches | $\frac{3}{8}$ | $\frac{1}{2}$ or $\frac{5}{8}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{2}$ | 2 | 3 | 4 | 6 |
|----------------------------------|-------------|-----------------|--------------------------------|---------------|-------|----------------|-------------------------------|--------|--------|-----|
| Greatest Proper { Cubic Ft. | | 1 | 2 | 4 | 8 | 12 | 20 | 36 | 72 | 120 |
| Quantity per minute } ..Gallons | | 7 $\frac{1}{2}$ | 15 | 30 | 60 | 90 | 150 | 270 | 540 | 900 |
| Price..... | 13.34 | 16.00 | 28.00 | 40.00 | 66.67 | 86.67 | 180.00 | 333.33 | 666.66 | |
| Connections...per set | .40 | .55 | .80 | 1.10 | | | Flanges without extra charge. | | | |

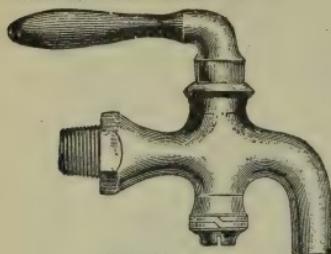
Connections are made only for $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, and 1-inch meters, and are always sent with these sizes, unless we are otherwise instructed. These sizes are made with male threads, while the $1\frac{1}{2}$ -inch and 2-inch meters have female threads. All threads are cut to fit standard pipe. The 3, 4, and 6-inch meters are made with flanges.

Fish Traps are made for all sizes of all our meters, and their use is particularly recommended in connection with the sizes above $1\frac{1}{2}$ inch, since they afford valuable protection against any foreign substance that is liable to work into the meters from the street main, and damage or destroy the working parts.

| Size |inches | $\frac{3}{8}$ to 1 | $1\frac{1}{2}$ to 2 | 3 | 4 | 6 | 10 and 12 |
|------------|-------------|--------------------|---------------------|-------|-------|-------|-----------|
| Price..... | | 6.67 | 8.00 | 13.34 | 20.00 | 26.67 | 200.00 |

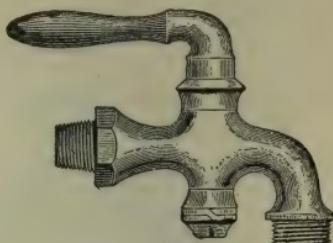
LEVER HANDLE BIBB COCKS

PLAIN, FOR IRON PIPE



B1740

HOSE, FOR IRON PIPE

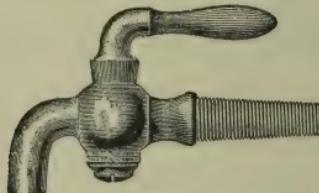


B1741

| Size | inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|--|--------|---------------|---------------|---------------|---------------|-------|----------------|----------------|--------|
| Finished Iron Pipe per doz. | | 15.50 | 18.00 | 21.50 | 29.00 | 41.00 | 70.00 | 110.00 | 210.00 |
| Finished, for Hose and Iron Pipe... " | " | 17.50 | 20.00 | 23.50 | 32.00 | 46.00 | 76.00 | 118.00 | 225.00 |

Rough Bibbs, in quantities, special price.

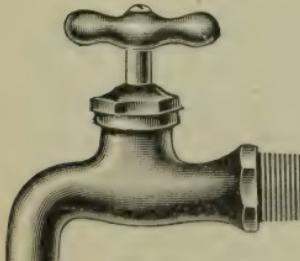
TO SCREW INTO WOOD



B1742

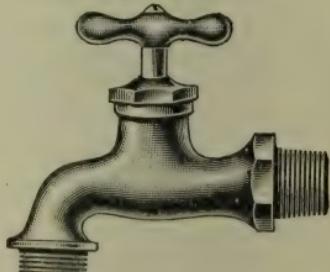
| Size..... | inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ |
|----------------------|-----------|---------------|---------------|---------------|
| Price, Finished..... | per dozen | 23.00 | 27.00 | 33.00 |
| " Nickel-plated..... | " | 25.00 | 30.00 | 37.00 |

FOR IRON PIPE



B1750

FOR IRON PIPE



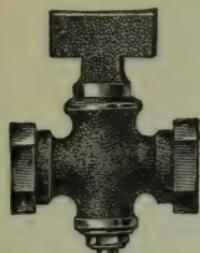
B1751

| Size..... | inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|----------------------------|--------|---------------|---------------|---------------|---------------|-------|----------------|----------------|--------|
| Plain Bibbs Finished, doz. | | 12.00 | 13.00 | 16.00 | 20.00 | 40.00 | 65.00 | 100.00 | 200.00 |
| Hose " " " | " | 14.00 | 15.00 | 18.00 | 22.00 | 43.00 | 69.00 | 106.00 | 210.00 |

Bibbs for Lead Pipe, same list as above.

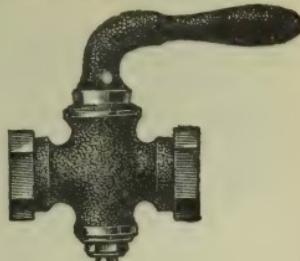
Nickel-plated Bibbs, extra. Rough Bibbs in quantities, special price.

T HANDLE STOP



B1752

LEVER HANDLE STOP



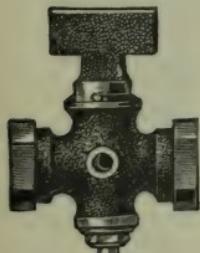
B1753

ROUGH
STOP COCKSCommon
Flat Way and Round Way

| Size.....inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|---------------------|---------------|---------------|---------------|---------------|-------|----------------|----------------|--------|
| Flat Way .per dozen | 15.00 | 17.00 | 22.00 | 26.00 | 38.00 | 60.00 | 90.00 | 180.00 |
| Round Way " | .... | 21.00 | 27.00 | 32.00 | 54.00 | 84.00 | 126.00 | 250.00 |

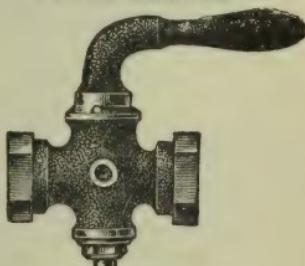
Same list price applies to Cocks for Lead Pipe.

T HANDLE



B1754

LEVER HANDLE



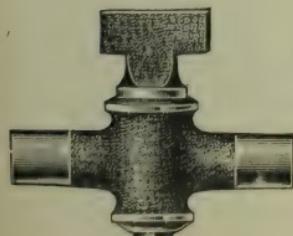
B1755

ROUGH STOP AND
WASTE COCKSCommon
Flat Way and Round Way

| Size.....inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|---------------------|---------------|---------------|---------------|---------------|-------|----------------|----------------|--------|
| Flat Way .per dozen | 17.00 | 19.00 | 24.00 | 23.00 | 41.00 | 64.00 | 96.00 | 190.00 |
| Round Way " | .... | 23.00 | 29.00 | 34.00 | 57.00 | 88.00 | 132.00 | 260.00 |

Same list prices applies to Cocks for Lead Pipe.

FOR LEAD PIPE

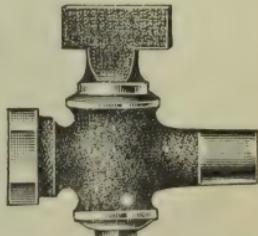


B1756

Flat or Round Way

ROUGH STOP COCKS
OR STOP AND
WASTET or Lever Handle
Flat Way or Round Way
Lead Pipe Both Ends or
Lead and Iron Pipe

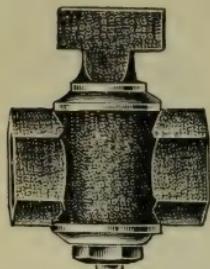
Use same lists prices as for Iron Pipe Cocks.

FOR LEAD AND
IRON PIPE

B1757

Flat or Round Way

See list prices above.



STOP AND STOP WASTE COCKS

"H" PATTERN

B1758

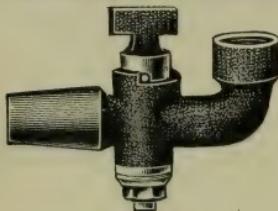
T Handle or Lever Handle

Iron Pipe or Lead Pipe

ROUND WAY

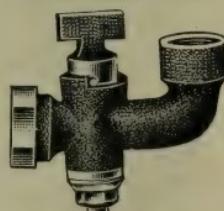
| Size..... | inches | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|--------------------|-----------|---------------|---------------|---------------|-------|----------------|----------------|--------|
| Stop Cocks..... | per dozen | 18.00 | 23.50 | 26.50 | 44.00 | 70.00 | 98.00 | 185.00 |
| Add for Waste..... | " | 2.00 | 2.00 | 2.00 | 3.00 | 4.00 | 6.00 | 10.00 |

FOR LEAD AND IRON PIPE



HYDRANT COCKS

FOR IRON PIPE



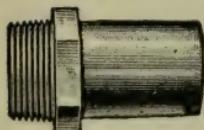
B1759

B1760

| Size..... | inches | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|----------------|-----------|---------------|---------------|---------------|-------|----------------|----------------|--------|
| Flat Way..... | per dozen | 21.00 | 27.00 | 31.50 | 45.00 | 69.00 | 104.00 | 200.00 |
| Round Way..... | " | 25.00 | 32.00 | 37.50 | 61.00 | 93.00 | 140.00 | 270.00 |

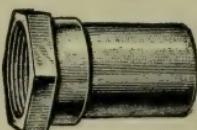
SOLDERING NIPPLES

MALE



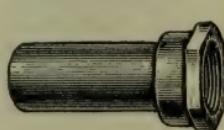
B1770

FEMALE



B1771

SOLDERING UNION



B1772

| Size... ins | $\frac{1}{8}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | ' 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | 4 |
|-------------|---------------|---------------|---------------|---------------|---------------|------|----------------|----------------|-------|----------------|-------|-------|
| Nipple.dz | 2.25 | 2.25 | 2.75 | 3.50 | 5.00 | 6.50 | 10.00 | 12.50 | 18.00 | 32.00 | 46.00 | 80.00 |
| Union. " | 4.00 | 4.00 | 4.00 | 4.50 | 6.00 | 8.00 | 12.00 | 15.00 | 21.00 | .... | .... | .... |

"H. MUELLER" SOLDER NIPPLES AND UNIONS

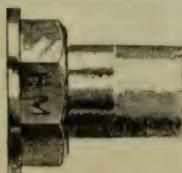
Nipples are with either male or female thread

| Size ....inches | $\frac{1}{8}\text{-}\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | 4 |
|------------------|----------------------------------|---------------|---------------|---------------|-----|----------------|----------------|------|----------------|------|------|
| Nipples.... each | .20 | .25 | .30 | .40 | .55 | .85 | 1.05 | 1.50 | 2.65 | 3.85 | 6.65 |
| Unions " | .30 | .30 | .35 | .50 | .65 | 1.00 | 1.25 | 1.75 | .... | .... | .... |

GAS METER UNION COUPLING

Plain for Lead Pipe

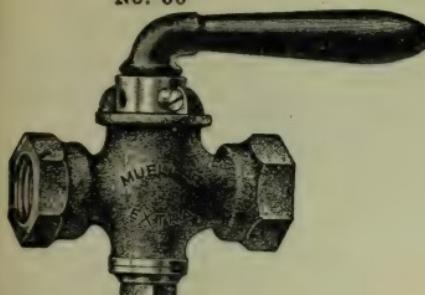
B1773



| Size | Lights | 3 | 5 | 10 | 20 | 30 | 45 | 60 |
|-------------------------------|--------|-----|-----|------|------|------|------|----|
| Plain. for Lead Pipe.... each | .30 | .40 | .55 | .90 | 1.25 | 1.45 | 1.70 | |
| Threaded for Iron Pipe " " | .35 | .45 | .75 | 1.10 | 1.50 | 1.60 | 1.85 | |

H. MUELLER ROUGH GROUND KEY COCKS

No. 60

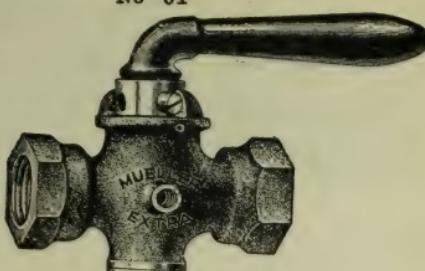


B1775

| | No. | No. |
|----------------------|-----|---------------|
| Iron Pipe, Flat Way, | 60; | Round Way, 66 |
| Lead " | 56; | " 62 |
| Lead and Iron, " | 58; | 64 |

No. 48

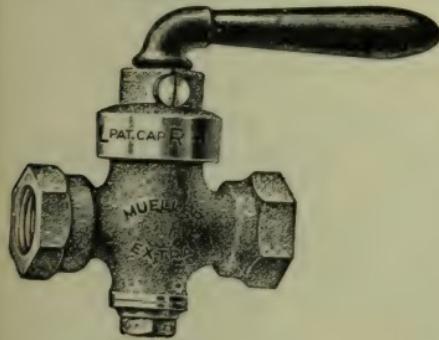
No. 61



B1776

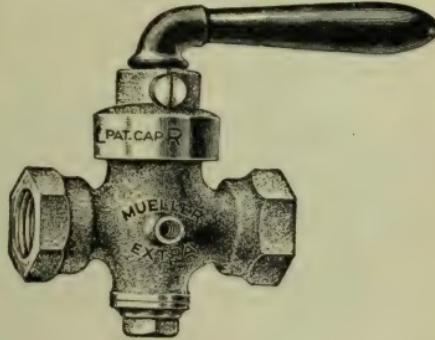
| | No. | No. |
|----------------------|-----|---------------|
| Iron Pipe, Flat Way, | 61; | Round Way, 67 |
| Lead " | 57; | " 63 |
| Lead and Iron " | 59; | 65 |

No. 49



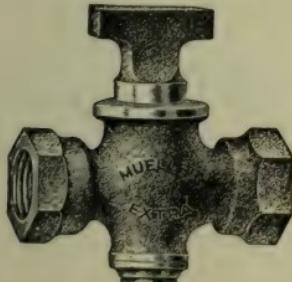
B1780

| | No. | No. |
|----------------------|-----|---------------|
| Iron Pipe, Flat Way, | 48; | Round Way, 54 |
| Lead " | 44; | " 50 |
| Lead and Iron " | 46; | 52 |

No. 24, ROUND WAY
No. 36, FLAT WAY

B1781

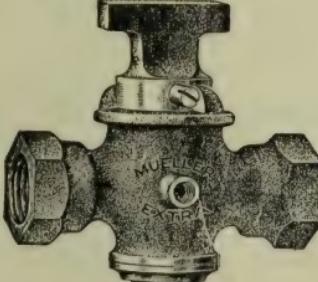
| | No. | No. |
|----------------------|-----|---------------|
| Iron Pipe, Flat Way, | 49; | Round Way, 55 |
| Lead " | 45; | " 51 |
| Lead and Iron " | 47; | 53 |

No. 25, ROUND WAY
No. 37, FLAT WAY

B1782

| | No. | No. |
|----------------------|-----|---------------|
| Iron Pipe, Flat Way, | 36; | Round Way, 24 |
| Lead " | 32; | " 20 |
| Lead and Iron " | 34; | 22 |

See next page for price list.



B1783

| | No. | No. |
|----------------------|-----|---------------|
| Iron Pipe, Flat Way, | 37; | Round Way, 25 |
| Lead " | 33; | " 21 |
| Lead and Iron " | 35; | 23 |

STOP COCKS, ROUGH

(See B1775, etc.)

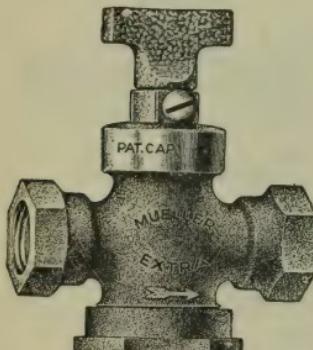
Cocks for Lead Pipe, or for Lead one end and Iron Pipe other end
same price as below.

| Pipe Size..... | inch. | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|---------------------------|-------|---------------|---------------|---------------|---------------|---------------|------|----------------|----------------|-------|
| Nos. 60, 48 and 36, Flat | | | | | | | | | | |
| Way..... | each | 1.20 | 1.25 | 1.40 | 1.85 | 2.15 | 3.15 | 5.00 | 7.50 | 15.00 |
| Nos. 66, 54 and 24, Round | | | | | | | | | | |
| Way..... | each | .... | 1.60 | 1.75 | 2.25 | 2.65 | 4.50 | 7.00 | 10.50 | 20.85 |

STOP AND WASTE COCKS, ROUGH

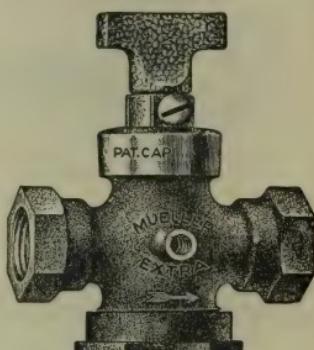
| Pipe Size..... | inch. | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|--------------------------|-------|---------------|---------------|---------------|---------------|---------------|------|----------------|----------------|-------|
| Nos. 61, 49 and 37, Flat | | | | | | | | | | |
| Way..... | each | 1.35 | 1.40 | 1.60 | 2.00 | 2.35 | 3.40 | 5.35 | 8.00 | 15.85 |
| Nos. 67, 55 and 25 Round | | | | | | | | | | |
| Way..... | each | .... | 1.75 | 1.90 | 2.40 | 2.85 | 4.75 | 7.35 | 11.00 | 21.65 |

No. 78



B1785

No. 79

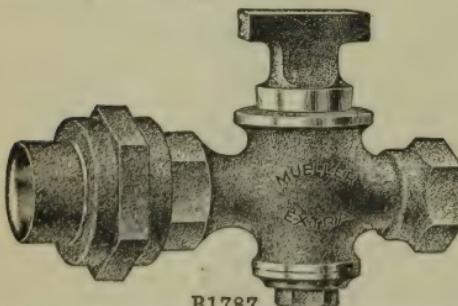


B1786

" H M "
INVERTED KEY
ROUND WAY
CURB COCKS

| Pipe Size..... | inch. | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|----------------------|-------|---------------|---------------|---------------|------|----------------|----------------|-------|
| Stop Cock | each | 2.10 | 2.75 | 3.25 | 5.40 | 8.50 | 12.85 | 25.00 |
| Stop and Waste | " | 2.25 | 2.90 | 3.40 | 5.65 | 8.85 | 13.35 | 25.85 |

If with Lead Flange, Union Connections; (see on B1787) one end or both ends, special price on application.



B1787

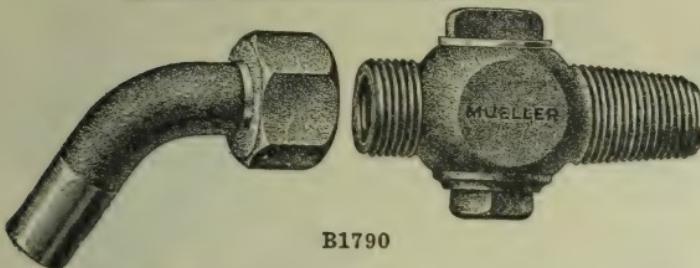
" H M " LEAD FLANGE
ROUND WAY COCK

Also made Flanged Both Ends. Also made Stop and Waste.

| Pipe Size | inch. | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|-------------------------------------|-------|---------------|---------------|---------------|------|----------------|----------------|-------|
| Flange one end only, Stop Cock..... | ea. | 2.35 | 3.00 | 4.00 | 5.70 | 8.65 | 12.90 | 20.15 |
| " " " " Stop and Waste " | | 2.50 | 3.15 | 4.15 | 5.95 | 9.00 | 13.40 | 21.00 |
| " both ends, Stop Cock....." | | 2.95 | 3.75 | 5.05 | 6.65 | 11.10 | 15.95 | 24.80 |
| " " " " Stop and Waste " | | 3.10 | 3.90 | 5.20 | 6.90 | 11.45 | 16.45 | 25.65 |

MUELLER CORPORATION COCKS

No. 4, FOR SCREW PLUG
Mueller Threads and $\frac{1}{8}$ Band Coupling



B1790

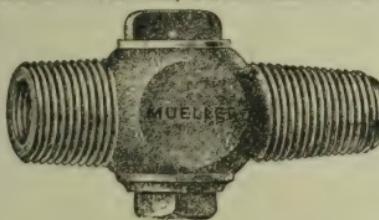
Can furnish with straight coupling if desired.

Can furnish with Iron Pipe Thread on inlet end if desired.

| Lead Pipe. Size.....inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | *2 |
|----------------------------|---------------|---------------|---------------|---------------|------|----------------|----------------|-------|
| Each..... | 1.45 | 1.60 | 2.25 | 2.85 | 4.50 | 9.00 | 12.00 | 20.00 |

*Outlet threads of $1\frac{1}{4}$, $1\frac{1}{2}$, and 2 inches are increasing iron pipe, as shown on B1792. Can also furnish Cocks for Payne Tapping Machine.

No. 6, FOR SCREW PLUG
Inlet End Mueller Thread, Outlet End Iron Pipe Thread

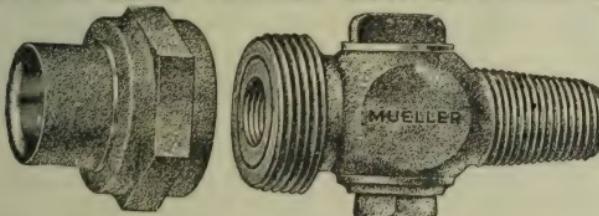


B1792

| Size.....inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|-------------------------|---------------|---------------|---------------|---------------|------|----------------|----------------|-------|
| As Illustrated.....each | 1.25 | 1.35 | 1.85 | 2.40 | 3.85 | 7.80 | 10.40 | 17.40 |

If with Union Coupling as shown on B1790, use B1790 list.

MUELLER LEAD FLANGE CORPORATION COCK



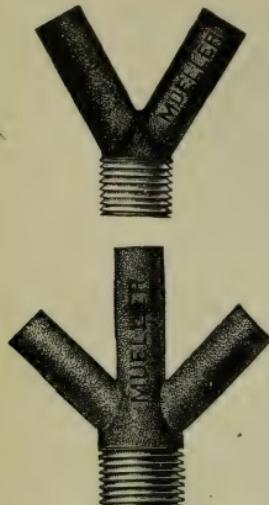
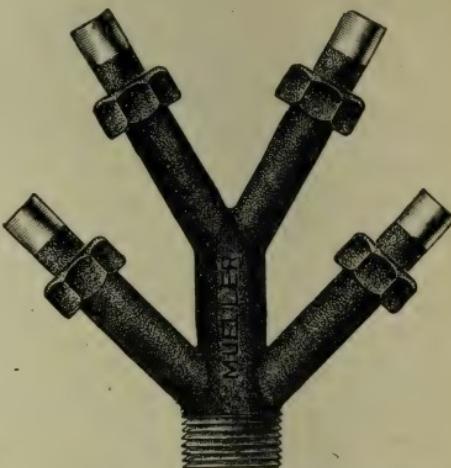
B1793

With Mueller Thread or with Iron Pipe Thread, on inlet end, as desired.

| Size | inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|------------|--------|---------------|---------------|---------------|---------------|------|----------------|----------------|-------|
| Each | | 1.50 | 1.85 | 2.30 | 2.95 | 4.20 | 8.30 | 13.05 | 21.10 |

H MUELLER BRANCH WATER CONNECTIONS

BRASS

B1794
Without
UnionsB1795
With Unions

Can furnish with Plain Outlet for lead pipes, also with Lead Flange Outlet special. Also made with inlets threaded, at special price.

Outlets Threaded for Iron Pipe, unless ordered otherwise.

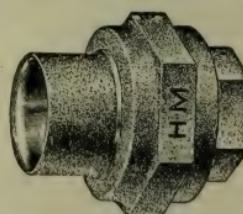
| | Plain Inlets | Union Inlets |
|---------------------------------|--------------|--------------|
| | Lead Pipe | Lead Pipe |
| 1½-inch Outlet, Two Inlets..... | 2.05 | 4.10 |
| 1½ " " Three " | 3.25 | 6.00 |
| 2 " " Four " | 5.40 | 8.60 |
| 2½ " " Six " | 9.70 | 18.35 |
| 3 " " Eight " | 16.25 | 26.05 |

DOUBLE CURB CONNECTION
With $\frac{3}{4}$ -inch Male Thread Inlet



B1796

LEAD FLANGE
Union Couplings



B1797

Two $\frac{3}{4}$ -inch Lead Pipe Outlets..... 1.30
 " $\frac{1}{2}$ " Iron " Thread Out-
 lets 1.40
 With Lead Flange Connections, special.

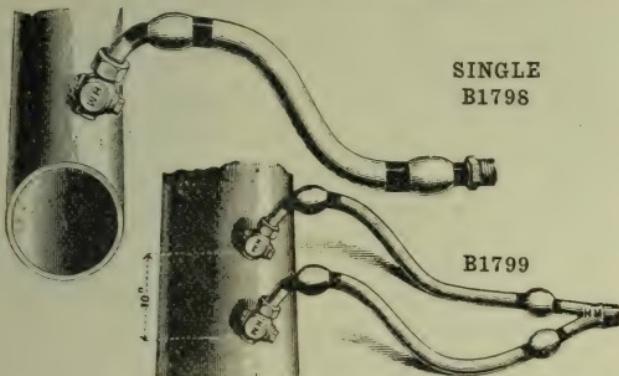
Lead one end, and female iron pipe
 thread other end.
 Also made with both ends flanged for
 lead pipe.

PRICE LIST LEAD FLANGE UNION COUPLINGS

| Size |inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|-------------------------------|-------------|---------------|---------------|---------------|---------------|------|----------------|----------------|------|
| Lead and Iron, B1797.....each | | .65 | .75 | 1.10 | 1.20 | 1.75 | 2.75 | 3.55 | 5.05 |
| Lead and Lead | " | 1.20 | 1.45 | 1.95 | 2.20 | 3.10 | 5.10 | 6.20 | 9.55 |

WIPE JOINT GOOSE NECKS

With Mueller Corporation Cocks



| Size..... |inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|--------------------|-------------|---------------|---------------|---------------|---------------|------|----------------|----------------|-------|
| B1798. Single..... | each | 3.60 | 4.30 | 5.25 | 6.25 | 9.20 | 15.60 | 23.15 | 35.50 |

MANIFOLD GOOSE NECK CONNECTIONS

B1799

| Outlets | Inlets | With Plain Lead Pipe Branches | With Lead Union Couplings | With Lead Flange Union Couplings |
|----------------------------------|-----------------------------|-------------------------------------|---------------------------------|--|
| 1 $\frac{1}{4}$ inches, with Two | $\frac{3}{4}$ inch Branches | 14.90 | 16.95 | 14.05 |
| 1 $\frac{1}{4}$ " " | 1 " | 20.10 | 22.15 | 19.10 |
| 1 $\frac{1}{2}$ " " | Three $\frac{3}{4}$ " | 23.35 | 26.05 | 22.45 |
| 1 $\frac{1}{2}$ " " | 1 " | 31.40 | 34.10 | 30.20 |
| 2 " " | Four $\frac{3}{4}$ " | 32.70 | 35.90 | 30.90 |
| 2 " " | 1 " | 43.70 | 46.90 | 41.45 |
| 2 $\frac{1}{2}$ " " | Six $\frac{3}{4}$ " | 53.35 | 62.00 | 55.15 |
| 2 $\frac{1}{2}$ " " | 1 " | 70.80 | 79.45 | 72.05 |
| 3 " " | Eight $\frac{3}{4}$ " | 78.50 | 88.30 | 81.15 |
| 3 " " | 1 " | 103.20 | 113.00 | 105.10 |

Can be furnished with outlet opening plain for Lead Pipe, also Lead Flange Coupling, if desired. See B1794 and B1795.

MUELLER WIPE JOINT GAS METER CONNECTIONS

Meter Ends, Quarter Bend Meter Union Couplings

Pipe Ends, Mueller Wipe Joint Union Meter Cock and Outside Thread Soldering Nipple



E1800



B1801

Prices quoted on application.

Can be furnished with straight unions instead of bent, also with cock without union coupling, or with solder nipple instead of cock. Can also be furnished with cup joints instead of wiped joints.

State whether male or female nipples are wanted. Can furnish any lengths desired.

GAS PRESSURE GAUGES



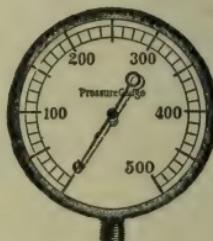
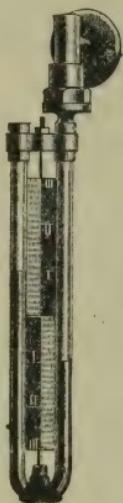
STRAIGHT
NATURAL
GAS
MERCURY
GAUGE

NATURAL
GAS
U
MERCURY
GAUGE

SPRING GAUGE
FOR
NATURAL GAS

With
Steel Tube Spring
for any Required
Pressure

ARTIFICIAL
GAS
U
WATER
GAUGE



B1802

5 Pound, each, \$5.00.
10, 15, 20, or 25 lb.
Gauges, Special.

B1803

3 Pound
Each, \$4.50.

B1805

See B884
This Book.

B1804

Special.
6, 8, 10, and 12 in.
Sizes.

PITOT TUBE GAUGE

Not Illustrated

For measuring volume of gas flowing from pipe line or gas well.

Two patterns—Expert Pattern and Permanent Pattern.

Price complete with one Tube and Spring Gauge, \$35.00; without Spring Gauge \$31.00. Single Tubes, extra, \$2.00; Double Tubes, extra, \$4.00.



EQUITABLE DRY METERS

For Fuel and Illuminating Gas

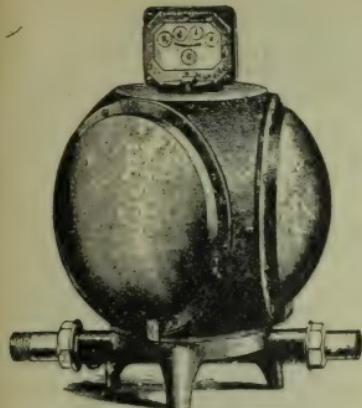
B1807

| Numbers..... | 1 | 2 | 3 | 4 | 4½ | 5 | 6 |
|---------------------------|-------|-------|-------|-------|-------|-------|-------|
| Pipe Size ...in. | ¾ | 1 | 1 | 1¼ | 1½ | 1½ | 2 |
| Capacity, cu. ft. per hr. | 300 | 400 | 500 | 600 | 600 | 1,000 | 1,200 |
| Price.....each | 14.00 | 14.50 | 15.00 | 16.00 | 16.50 | 25.00 | 26.00 |

Cut shows vertical dial, with flat dial if desired.

Tested on 30 pounds air pressure, and will stand high pressure.

Will run full rated capacity on 2 inches water pressure.



B1808

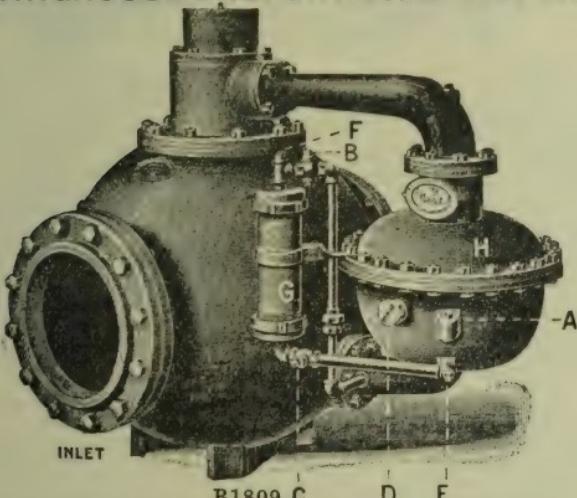
TOBEY NATURAL GAS METERS

| Size No. | Iron Pipe Brass Union Connections Inches | Iron Pipe Connections Without Union Inches | Capacity Per Hour 2 Inch Water Pressure Cubic Feet | List |
|-------------|---|---|---|-------|
| 1 | 1 | 1 $\frac{1}{4}$ | 300 | 15.50 |
| 2 | 1 $\frac{1}{4}$ | 1 $\frac{1}{2}$ | 500 | 22.00 |
| 3 | 1 $\frac{1}{2}$ | 1 $\frac{1}{2}$ | 800 | 34.00 |
| 4 | 2 | .... | 1,500 | 90.00 |

The capacity doubles when you increase the pressure four times.

Tobey Meters are not made to stand high pressure. The body, or case, is tested to 25 pounds pressure, but they must not be put in service on a greater pressure than 16 ounces. Six to 10 ounces is the proper pressure on which they should be used.

WESTINGHOUSE PROPORTIONAL GAS METER



B1809 C D E

| Size of Connec- tions Inches | Capacity in Cubic Feet Per Hour | *Price | Height Inches | Floor Space Inches | Size of Connec- tions Inches | Capacity in Cubic Feet Per Hour | *Price | Height Inches | Floor Space Inches |
|---------------------------------------|--|--------|------------------|--------------------------|---------------------------------------|--|----------|------------------|--------------------------|
| 3 | 5,000 | 135.00 | 20 | 15 x 28 | 6 | 30,000 | 278.00 | 24 | 23 x 35 |
| | 6,000 | 143.00 | 20 | 15 x 28 | 8 | 40,000 | 335.00 | 30 | 30 x 42 |
| | 8,000 | 152.00 | 20 | 15 x 28 | 8 | 50,000 | 415.00 | 30 | 30 x 42 |
| 4 | 10,000 | 158.00 | 22 | 19 x 30 | 10 | 75,000 | 507.00 | 48 | 37 x 56 |
| | 15,000 | 188.00 | 22 | 19 x 30 | 12 | 100,000 | 667.00 | 48 | 37 x 56 |
| 6 | 20,000 | 210.00 | 24 | 23 x 35 | 12 | 125,000 | 900.00 | 48 | 37 x 56 |
| | 25,000 | 248.00 | 24 | 23 x 35 | 12 | 150,000 | 1,050.00 | 48 | 37 x 56 |

Prices include sealing fluids. Loose flanges are furnished with these meters.

Westinghouse meters are all metal, and tested to withstand a pressure of 50 pounds per square inch. Heavier meters quoted on application.

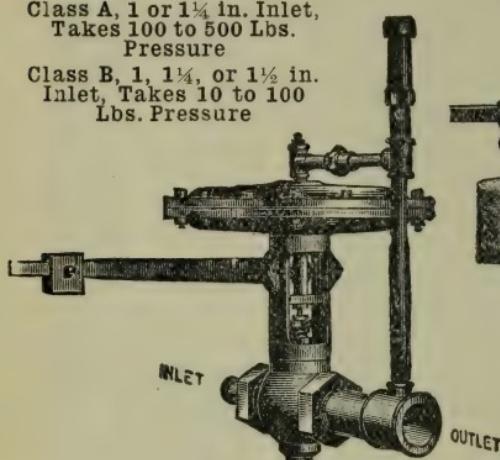
If meters are used on high pressure the readings should be corrected by using the proper multiplier.

FULTON NATURAL GAS REGULATORS

FULTON HOUSE REGULATOR Reduces to Ounces

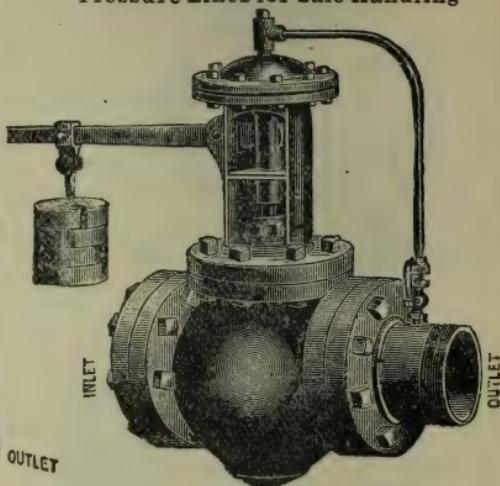
Class A, 1 or $1\frac{1}{4}$ in. Inlet,
Takes 100 to 500 Lbs.
Pressure

Class B, 1, $1\frac{1}{4}$, or $1\frac{1}{2}$ in.
Inlet, Takes 10 to 100
Lbs. Pressure



B1810

HIGH PRESSURE REGULATOR Will Reduce Well-Pressure or High- Pressure Lines for Safe Handling



B1811

Low Pressure Line Regulators are similar to B1810, having large diaphragm. Regulators 3-inch and larger have flanges and bolts like B1811.

| Inlet Inches | Outlet, Inches | Price Each | Inlet Inches | Outlet, Inches | Price Each |
|-----------------|---|---------------|-----------------|---|---------------|
| 1 | 1, $1\frac{1}{4}$, $1\frac{1}{2}$, or 2 | 20.00 | 4 | $4\frac{1}{2}$, 5, $5\frac{1}{2}$, or 6 | 90.00 |
| $1\frac{1}{4}$ | $1\frac{1}{4}$, $1\frac{1}{2}$, or 2 | 25.00 | 6 | 6 to 8 | 150.00 |
| $1\frac{1}{2}$ | $1\frac{1}{2}$ or 2 | 30.00 | 8 | 8 to 10 | 225.00 |
| 2 | 2, $2\frac{1}{2}$, 3, or 4 | 40.00 | 10 | 10 | 325.00 |
| $2\frac{1}{2}$ | $2\frac{1}{2}$, 3, or 4 | 55.00 | 12 | 12 | 450.00 |
| 3 | 3, $3\frac{1}{2}$, 4, or 6 | 70.00 | 16 | 16 | 650.00 |

THE HIGH PRESSURE REGULATOR

Reduces well pressure of several hundred pounds to 100 pounds, 50 pounds, etc., as desired. When ordering, state pressure on inlet side, also pressure you wish to reduce to.

THE LOW PRESSURE REGULATOR

Has a large diaphragm as shown on B1810, and is intended to reduce 5, 10, 20, or 50 pounds, etc., pressure to a lower pressure, generally 6 or 8 ounces, although they will take gas at 200 pounds pressure and reduce it to a pressure of a few ounces; but a regulator does not give so good satisfaction where so great a reduction is to be made in one valve. Where well pressure is to be reduced to a low pressure, two regulators should be used, a high pressure regulator to reduce the pressure to approximately 50 pounds, before it passes into the low pressure regulator.

Always state pressure on inlet, also to what pressure gas is to be reduced.

FULTON BOILER REGULATORS

Similar to B1811 high pressure regulator, except the small by-pass or pilot pipe on top of regulator is connected to dome of boiler instead of outlet end of regulator, so that the steam pressure acts on the diaphragm to open and close the regulator gradually as the steam pressure falls or rises from a given point. Gas should be fed into the boiler regulator at not over two pounds pressure, a few ounces being the most suitable. Can be made special for as high as 50 pounds gas pressure.

| | | | | | | | | | | | |
|---------------|-------|----------------|----------------|-------|----------------|-------|----------------|-------|-------|--------|--------|
| Size..... in. | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{4}$ | 3 | $3\frac{1}{2}$ | 4 | 5 | 6 | 8 |
| Price...each | 18.00 | 23.00 | 28.00 | 40.00 | 48.00 | 55.00 | 65.00 | 75.00 | 90.00 | 110.00 | 165.00 |

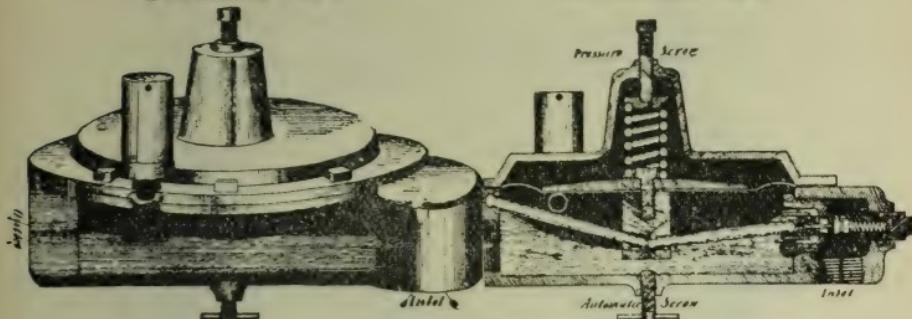
Boiler Regulators should always have inlet and outlet of the same size, which in all cases should be as large as the pipe supplying the furnace.

All Regulators 3-inch and larger have flanged ends with extra flanges bolted on.

LITTLE GIANT GAS REGULATORS HOUSE REGULATOR

EXTERIOR VIEW

SECTIONAL VIEW



B1814

No. 1, 1x1 in., 8.00. No. 2, 1 $\frac{1}{4}$ x1 $\frac{1}{4}$ in., 10.00.

The No. 1 will reduce direct from the well or high pressure line and give steady pressure in the house at from 6 ounces to 3 pounds, as required. The pressure is changed by the set-screw on top; the screw in the bottom opens the automatic valve.

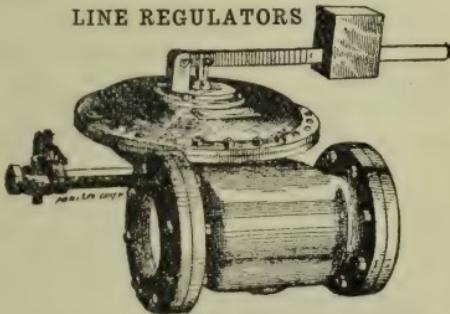
The No. 2 has 1 $\frac{1}{4}$ inch connections and is well adapted for house use where the pressure is 20 pounds or less. It has no automatic valve.

LIGHT LINE REGULATORS



B1815

LINE REGULATORS



B1816

LIGHT LINE REGULATORS, B1815

| Number | Inlet Inches | Outlet Inches | Each | Number | Inlet Inches | Outlet Inches | Each |
|--------|-----------------|------------------|------|--------|-----------------|------------------|-------|
| 5 | 1 $\frac{1}{2}$ | 1 $\frac{1}{2}$ | 4.00 | 9 | 1 | 1 | 8.00 |
| 6 | 1 $\frac{1}{2}$ | 1 $\frac{1}{4}$ | 5.00 | 10 | 1 | 1 $\frac{1}{2}$ | 9.00 |
| 7 | 1 $\frac{3}{4}$ | 1 $\frac{3}{4}$ | 6.00 | 12 | 2 | 2 | 30.00 |
| 8 | 1 $\frac{3}{4}$ | 1 | 7.00 | ..... | ..... | ..... | ..... |

For gas engine, state horse power of engine, gas pressure, and size of supply pipe.

HIGH OR LOW PRESSURE LINE REGULATORS, B1816

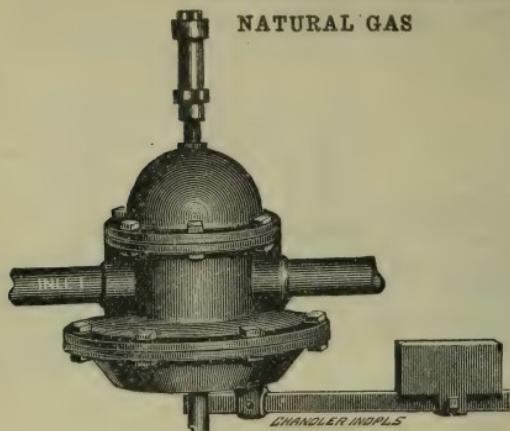
| Size | inches | 1 $\frac{1}{4}$ | 1 $\frac{1}{2}$ | 2 | 3 | 4 | 6 | 8 |
|------------|--------------|-----------------|-----------------|-------|-------|-------|--------|--------|
| Price..... | each | 16.00 | 25.00 | 40.00 | 70.00 | 90.00 | 150.00 | 225.00 |

The High Pressure Regulator reduces pressure of 200 to 300 pounds or more, to say 20 or 30 pounds. We can furnish these to reduce to any pressure, if pressure is stated when ordering.

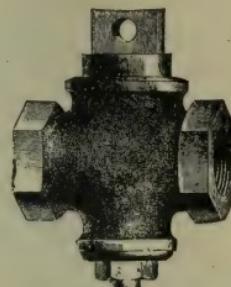
The Low Pressure Regulator will reduce any pressure to a few ounces, but it is best to use two regulators to reduce from very high pressure. They are set to reduce to 2 or 3 ounces, but by applying weights the same regulator will give 4 or 5 pounds pressure.

WRIGHT REGULATORS

NATURAL GAS

BRASS AND IRON
GAS COCKS

B1820

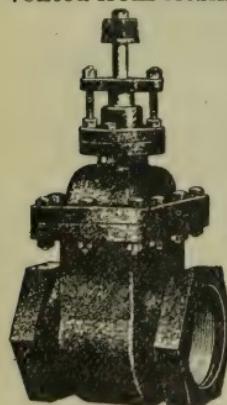


See B656 to B670

| No. | Inlet | Outlet | Reduces | Price |
|-----|--------|--------|--|-------|
| 1 | 1 inch | 1 inch | Rock Pressure, or less, to Ounces..... | 8.00 |
| 3 | 2 " | 2 " | " " " 25 to 150 Pounds.. | 45.00 |
| 6 | 2 " | 2 " | Rock Pressure to Ounces..... | 35.00 |

Nos. 1 and 5 have Automatic Shut-off Valves. The Automatic Attachment on No. 5 is a new arrangement by which the cut-off is prevented from closing so long as there is an ounce of pressure in the mains.

ALL IRON NATURAL GAS VALVE HEAVY VALVES



Special 2-inch Screwed, for 300-lb. Gas Well use, \$10.00.
Medium Valves, 2 to 16-inch Screwed and Flanged, for
150 lbs. pressure, quoted on application.

Extra Heavy Valves for High Pressure Natural Gas and Oil Lines

| Size..... inch | 2 | 3 | 4 | 5 | 6 | 8 | 10 | 12 |
|------------------------|-------|-------|-------|-------|-------|--------|--------|--------|
| Screwed.. Each | 12.30 | 17.00 | 23.00 | 29.00 | 36.00 | 65.00 | 100.00 | 131.00 |
| Flanged .. " | 13.50 | 19.00 | 25.00 | 31.50 | 39.00 | 68.00 | 105.00 | 142.00 |
| Flanges and Bolts } .. | 25.00 | 30.00 | 40.00 | 52.50 | 79.00 | 124.00 | 173.00 | |

The above valves are suitable for 500 lbs. pressure.

B1819

ALL IRON HYDRAULIC GATE VALVES For Extreme High Pressure Natural Gas and Oil

| Size..... inch | 2 | 3 | 4 | 6 | 8 | 10 | 12 |
|-------------------|-------|-------|-------|-------|--------|--------|--------|
| Screwed..... each | 14.00 | 25.00 | 38.00 | 60.00 | 95.00 | 135.00 | 200.00 |
| Flanged .. " | ..... | 27.00 | 40.00 | 63.00 | 99.00 | 140.00 | 235.00 |
| " with.... } | ..... | 35.00 | 50.00 | 80.00 | 125.00 | 175.00 | 275.00 |

Hub End Natural Gas Valves quoted on application.

All Iron Valves with casing threads, list same as pipe sizes as follows: 4 or 4½-inch casing—4½-inch, 5% or 6¼-inch casing—6-inch, etc.

GAS AND OIL WELL PACKERS

DRESSER CAP PACKER



B1821

| | | | | |
|--------------------------|-----------|-----------|-----------|-----------|
| Size 2 inch Tubing | 4½ Casing | 4½ Casing | 5½ Casing | 6½ Casing |
| Length of Rubber..... | 10 inch | 10 inch | 16 inch | 16 inch |
| Price Complete..... | 12.00 | 12.00 | 22.00 | 26.00 |
| " Rubber, only..... | 6.00 | 6.00 | 15.00 | 16.00 |

ARMOUR CONE PACKER



B1822

| | | |
|--|---------|--------------------|
| 2 x 5½ x 10 inch Rubber Complete | \$16.00 | Rubber only \$7.00 |
| 2 x 6½ x 10 " " | 18.50 | " " 9.00 |

HOADLEY WALL PACKER



B1823

| | | |
|---|------|---------|
| 2 inch for 4 or 4½ inch Casing, 12-inch Rubber..... | each | \$22.00 |
| 2 " " 4½ " " 12 " " | " | 23.00 |
| 2 " " 5½ " " 14 " " | " | 30.00 |
| 3 " " 5½ " " 14 " " | " | 40.00 |

PONEY PACKER

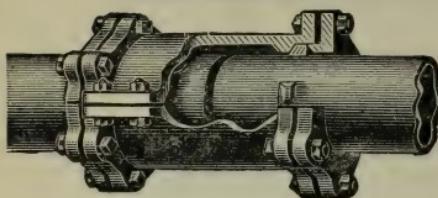
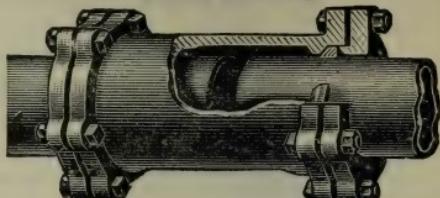


B1824

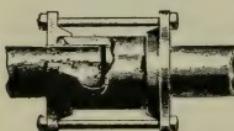
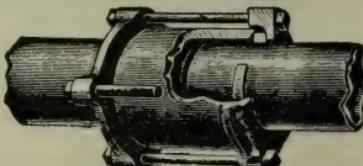
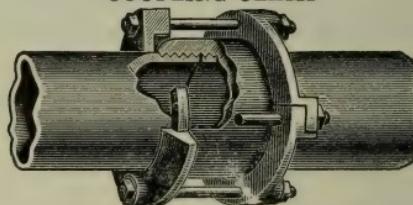
| | | |
|--|------|--------|
| ¾ inch or 1 inch to pack, 2 inch hole..... | each | \$6.00 |
| Extra Rubbers | " | 3.00 |

DAYTON GAS PIPE SADDLES—B1825 Malleable

| Size.....inch | 2 | 3 | 4 | 4½ | 4½ | 5 or 5½ | 5½ | 6 | 6 | 6½ | 6½ |
|-----------------|------|------|------|------|------|---------|------|------|------|------|------|
| Tapped.. " | 1-1½ | 1-2 | 1-2 | 1-2 | 1-2 | 1-2 | 2½-4 | 1-2 | 2½-4 | 1-2 | 2½-4 |
| Each..... | 1.00 | 1.00 | 1.25 | 2.00 | 2.50 | 2.75 | 5.50 | 2.50 | 5.75 | 3.00 | 5.75 |
| Size inch | 6½ | 6½ | 7½ | 7½ | 8 | 8 | 10 | 10 | 12 | 12 | ... |
| Tapped.. " | 1-2 | 2½-4 | 1-2 | 2½-4 | 1-2 | 2½-4 | 1-2 | 2½-4 | 1-2 | 2½-4 | ... |
| Each..... | 4.25 | 6.00 | 4.50 | 6.50 | 4.50 | 6.50 | 5.50 | 6.75 | 6.25 | 8.75 | ... |

WATSON SLEEVES**SPLIT SLEEVE****B1834****SOLID SLEEVE****B1835**

The ends of the Sleeves have perfectly fitted stuffing boxes supplied with rubber packing rings. They are especially for use on natural gas lines, where the threads on the pipe or coupling do not make a perfectly tight joint. Our Sleeves will take the place of couplings and make a better joint, or can be used over the couplings. No better expansion joint can be made than our Sleeve. The Long Solid, size 1 inch to 4 inch inclusive, and the Short Solid 6 inches and larger, are for a working pressure of 500 pounds or less. The others are for any working pressure under 1,500 pounds.

"EUREKA" COUPLING**B1836****"INDIANA" COUPLING****B1837****COUPLING CLAMP****B1838****PRICE EACH**

| Pipe Size.....inch | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | 3 | 4 | 6 | 8 | 10 | 12 |
|---------------------|---------------|------|----------------|----------------|------|------|------|-------|-------|-------|-------|
| Split Sleeve..... | | | | | | 7.00 | 8.00 | 15.00 | 20.00 | 30.00 | .... |
| Solid Sleeve..... | | 1.00 | 1.50 | 2.00 | 2.50 | 5.00 | 6.00 | 9.00 | 15.00 | 22.00 | 24.00 |
| Eureka Coupling.... | .50 | .60 | .65 | .70 | 1.05 | .... | .... | .... | .... | .... | .... |
| Indiana "..... | | .75 | 1.00 | 1.25 | 1.50 | 2.00 | 3.50 | 5.00 | 6.50 | 8.00 | 12.00 |
| Coupling Clamp..... | | | | | | 1.50 | 2.00 | 3.00 | 4.00 | 5.00 | .... |

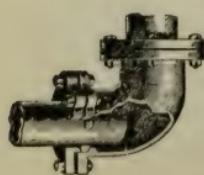
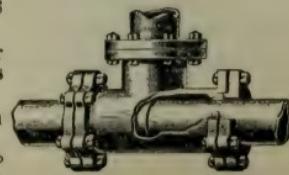
Casing Sizes.—4 $\frac{1}{4}$ inch, use 4 inch list; for 5 $\frac{1}{2}$ inch and 6 $\frac{1}{4}$ inch, use 6 inch list.

Extra Long Solid Sleeves, 6, 8 and 10 inch quoted on application.

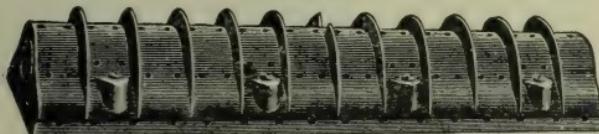
Solid Sleeves tapped in side for pipe, makes a convenient T. Prices on application.

Sleeves and Clamps for cast iron pipe quoted on application.

Watson Extra Heavy Ells, 45° Ells, Tees, Crosses and Gate Valves, quoted on application.

**B1839****B1840**

NATURAL GAS STOVE BURNERS “WINDSOR”



B1850

Made with end or bottom opening, for 1-inch or 1½-inch Mixer.

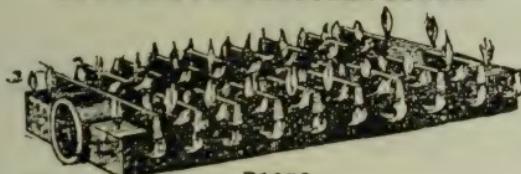
| | | | | | | |
|-------------|--------|------|------|------|------|------|
| Length..... | inches | 12 | 14 | 16 | 18 | 20 |
| Price..... | each | 1.00 | 1.30 | 1.40 | 1.50 | 1.60 |

“WINDSOR” ROUND BURNER

B1861

With bottom opening for 1-inch or 1½-inch Mixer.

| | | | | | | |
|---------------|--------|-----|------|------|------|------|
| Diameter..... | inches | 4 | 6 | 8 | 10 | 12 |
| Price..... | each | .50 | 1.00 | 1.50 | 2.00 | 2.50 |

ONE-PIECE RECTANGULAR BURNER

B1852

| | | | | | | |
|---------------------|--------|------|------|------|------|------|
| Number..... | 1 | 2 | 3 | 4 | 5 | 6 |
| Size of Burner..... | inches | 4x12 | 4x14 | 4x16 | 4x18 | 5x20 |
| Price..... | each | 1.25 | 1.50 | 1.75 | 2.00 | 2.25 |

End and center inflow, 1½-inch unless otherwise ordered.

**COMBINATION BURNER**

B1853

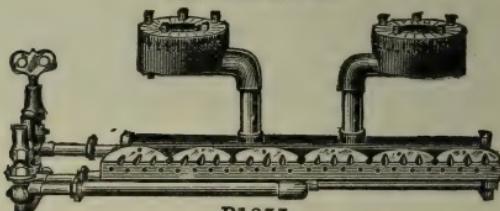
Can burn wood or coal on top of burner.

Tapped end or center for 1-inch Mixer.

| | | | | | | |
|-------------|--------|------|------|------|------|------|
| Length..... | inches | 12 | 14 | 16 | 18 | 20 |
| Price..... | each | 1.00 | 1.30 | 1.40 | 1.50 | 1.60 |

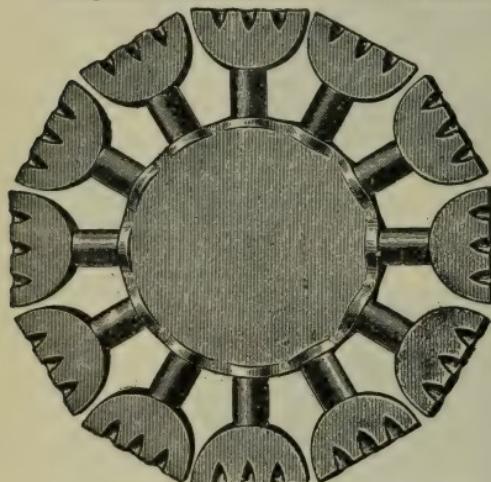
ROUND COMBINATION BURNER. Tapped in Bottom. B1854

| | | | | | |
|---------------|--------|------|------|------|------|
| Diameter..... | inches | 6 | 8 | 10 | 12 |
| Price..... | each | 1.00 | 1.50 | 2.00 | 2.50 |

BURNERS**CALORIFIC THREE-WAY BURNER**
4½ Inches Wide

B1855

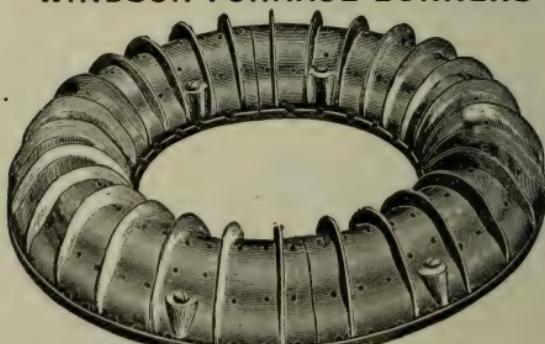
When ordering, state whether right hand or left hand burner is wanted. Cut shows right hand. Valves being at right hand side when placed in stove.
Complete as shown, each: 14 inch, \$6.00; 16 inch, \$6.50.

**CALORIFIC FURNACE
BURNERS**

B1856

| | |
|-----------------------------|-------|
| 7, 8, 9 or 10 inch.....each | 4.50 |
| 11, 12, 13 " 14 " " | 5.00 |
| 15, 16, 17 " 18 " " | 6.00 |
| 19, 20, 21 " 22 " " | 8.00 |
| 23, 24, 25 " 26 " " | 10.00 |
| 27, 28, 29 " 30 " " | 15.00 |
| 31, 32, 33 " " | 20.00 |
| 34, 35, 36 " " | 25.00 |

Burners should be 4 inches smaller diameter than the grate bars of furnace.

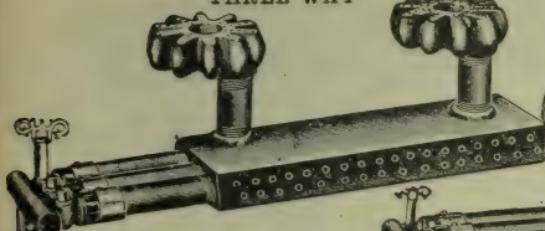
WINDSOR FURNACE BURNERS

B1857

| | |
|---|-------|
| No. 16, 16 Inches in Diameter, in 2 Sections, Tapped, 1½.....each | 6.00 |
| " 18, 18 " " " 2 " " 1½....." | 8.50 |
| " 20, 20 " " " 3 " " 1½....." | 10.00 |
| " 22, 22 " " " 3 " " 2" | 12.00 |
| " 24, 24 " " " 3 " " 3" | 13.50 |

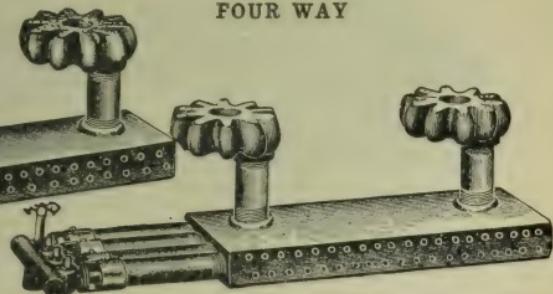
STAR BURNER

THREE WAY



B1858

FOUR WAY



B1859

| | | | |
|----------------------------|------|---------------------------|------|
| 12 inch Three Way.....each | 5.00 | 12 inch Four Way.....each | 6.00 |
| 14 " " " | 5.50 | 14 " " " | 6.50 |
| 16 " " " | 6.00 | 16 " " " | 7.00 |
| 18 " " " | 6.50 | 18 " " " | 7.50 |
| 20 " " " | 7.00 | 20 " " " | 8.00 |

No. 1



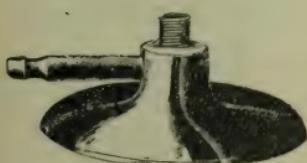
MONITOR BURNERS

B1860

| | | |
|-------------|-----------|------|
| No. 1 | per dozen | 3.00 |
|-------------|-----------|------|

No. 1 has brass stem.

| | | |
|----------------------|-----------|-------|
| No. 2, All Iron..... | per dozen | 12.00 |
| No. 3, " | " | 16.00 |



MONITOR BURNER STAND

B1861

| | |
|----------------|------|
| Per Dozen..... | 6.00 |
|----------------|------|



HORSESHOE BURNER

B1862

For $\frac{3}{4}$ Inch Burner

| | | |
|--------------------|------|-----|
| Price, 6 Inch..... | each | .75 |
|--------------------|------|-----|

See Special Valve and Mixer for Horse
Shoe Burner, B1884.

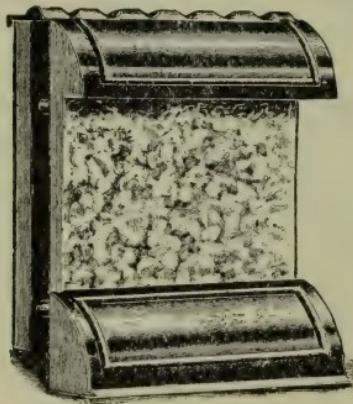
GAS HOT PLATES



B1863

State whether wanted for Natural or Artificial Gas.

| | | |
|--------------------|------|------|
| Three Burners..... | each | 3.50 |
| Two " | " | 2.50 |
| One Burner..... | " | 1.25 |



PITTSBURG GAS STOVE

B1864

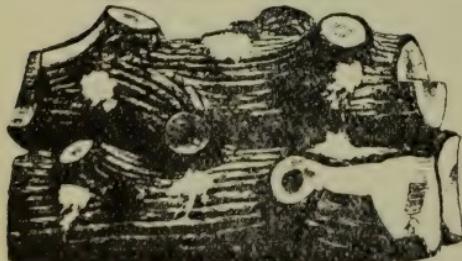
Price each, \$7.50.

For Natural Gas.

Dimensions, 20 x 26 in. high.

Black Iron.

THREE STICK PATTERN



TERRA COTTA GAS LOG

B1865

For factory shipment only.

Price per inch (length), 75c.

Tapped in bottom for mixer.

State whether for Natural or Artificial Gas.

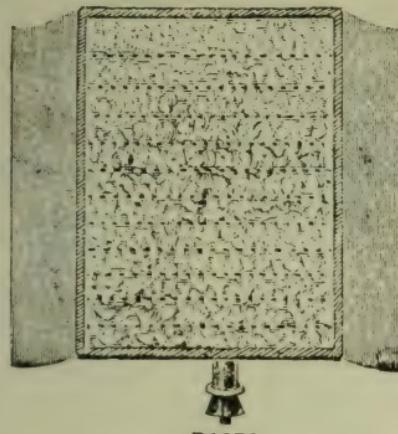


POTTERY STILTS

B1866

Per bbl., \$6.00.

For factory shipment only.

**BACK WALL
BURNER****FOR OPEN
GRATE**

B1870

When ordering, state width and height of fireplace opening.
Brass fender for bottom of burner is extra

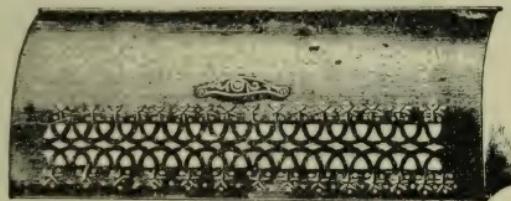
PRICES INCLUDING MIXER

| | | | | | |
|--|--------|------|------|------|------|
| Width of Grate opening | inches | 18 | 20 | 22 | 24 |
| Price, with Polished Brass Side Flanges..... | each | 5.50 | 5.50 | 5.70 | 5.90 |

When ordering burner state width and height of opening of the fireplace frame.

**BRASS FENDERS FOR
GAS FIRES**

Polished Brass. Height, 9 inches



B1871

| | | | | | | |
|-------------|--------|------|------|------|------|------|
| Length..... | inches | 18 | 20 | 22 | 24 | 26 |
| Price..... | each | 1.60 | 1.60 | 1.60 | 1.80 | 2.00 |

PERFECTION STEEL BURNER

14 inch to 26 inch Lengths
each 80c.

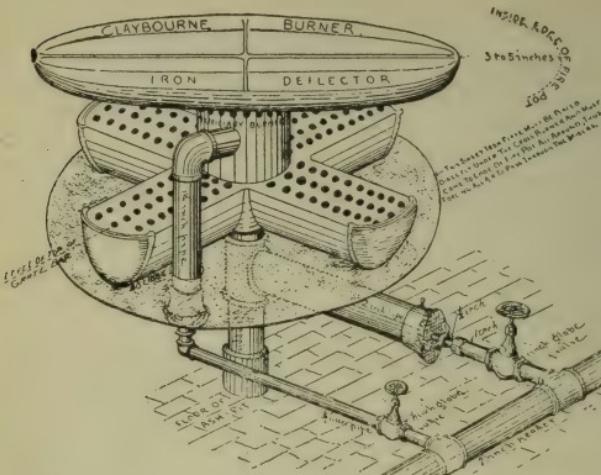


E1872

Asbestos Boards, 40 x 40 inches (see Packing).

Asbestos Fibre in bulk, per Pound, 70c.

Fire Proof Glue, Pint, 35c.; Quart, 50c.; Gallon, \$1.50.



CLAYBOURNE BURNERS

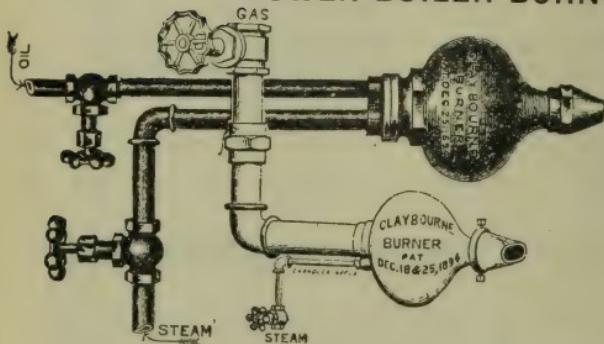
CHICAGO FURNACE
BURNER
for Natural or Fuel Gas

B1875

Price, including Mixers,
\$10.00.

Valves are extra.

POWER BOILER BURNERS



OIL BURNER, B1876

Price, \$25.00.

(Valves not included.)

GAS BURNER, B1877

Price, \$25.00.

(Valves not included.)

BOILER BURNERS

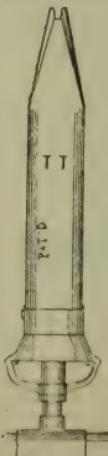
(Gas)

With Natural Draft and Improved
Patent Mixer

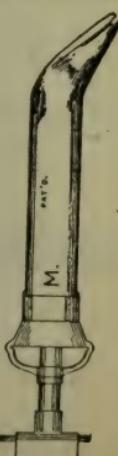
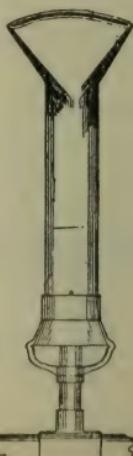
Price each, \$2.50.

Including 2-inch Mixer.

T BURNER



45° BURNER

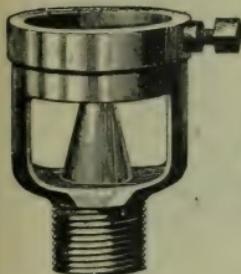


CLAYBOURNE APPLIANCES

are intended for the economical
use of Gas and Oil Fuel.

If interested, please state requirements
fully.

B1878

GAS MIXERS**No. 0
OPEN SIDE**

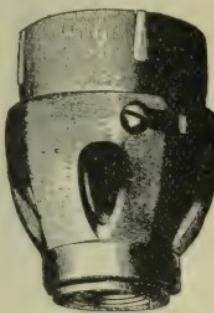
B1880

**No. 8
KITTANNING
Solid**

B1881

**SHIELD AND
SLIP PIN**

B1882

**No. 16
IRON SHIELD**

B1883

Rough1x $\frac{3}{8}$ inch..... .251x $\frac{1}{2}$ "27**Rough**1 x $\frac{3}{8}$ inch... .401 x $\frac{1}{2}$ "401 $\frac{1}{4}$ x $\frac{3}{8}$ "501 $\frac{1}{4}$ x $\frac{1}{2}$, "50**Nickel Plated**1x $\frac{3}{8}$ inch.... .751x $\frac{1}{2}$ "75

Finished Only

1x $\frac{3}{8}$ inch.... .701x $\frac{1}{2}$ "70**As Illustrated**

2x1 inch.70

Cadman Iron Mixers

with Brass Slip Pin
and Set Screws without shield.For 1, 1 $\frac{1}{4}$, 1 $\frac{1}{2}$ or
2-inch pipes, 65c. 70c,
75c, and 80c each.The No. 8 Mixer with Slip Pin, add
Set Screw in large end..... "

.05

.02

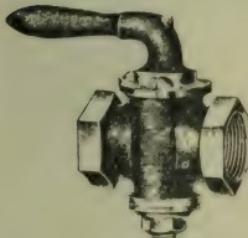
**COMBINATION
MIXER AND VALVE**

(For Horse Shoe

Burner B1862)

 $\frac{3}{4}$ -inch Mixer with
 $\frac{3}{8}$ -inch Valve**GAS STOVE COCK**

Brass



B1885

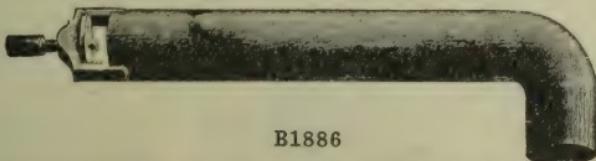
With Check



B1884

Per dozen, 10.00

| Size.....inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ |
|-----------------|---------------|---------------|---------------|
| Each..... | 1.25 | 1.35 | 2.15 |

FURNACE BURNERS

B1886

Each

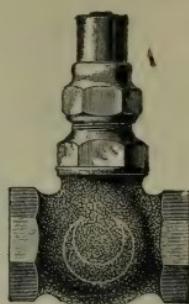
1.50

ANGLE VALVE



B1900

GLOBE VALVE



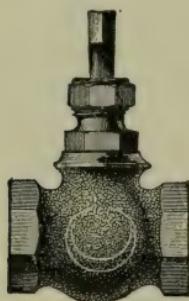
B1901

NATURAL GAS
STOVE VALVESLOCK SHIELD
VALVES

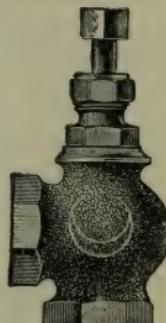
Keys are extra.

| Size..... |inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 |
|-----------------|-------------|---------------|---------------|---------------|------|
| Rough Body..... | each | 1.10 | 1.35 | 1.60 | 2.25 |

Nickel Plated Valves are extra.

GLOBE VALVE
 $\frac{1}{4}$ Inch Square on Stem

B1902

ANGLE VALVE
 $\frac{1}{2}$ Inch Square on Stem

Rough Body

SQUARE STEM
VALVES

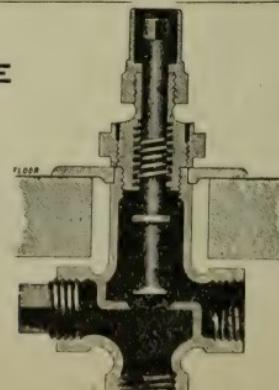
Keys are extra.

| Size..... |inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 |
|--|-------------|---------------|---------------|---------------|------|
| Globe or Angle, $\frac{1}{4}$ inch Square on Stem..... | each | .77 | 1.00 | 1.26 | 1.80 |
| " " " " " | " " " " " | .90 | 1.20 | 1.60 | 2.10 |

FLOOR PLATE

Rough Body

Nickel Plated



GRATE VALVES

B1904

 $\frac{1}{2}$ Inch,

Each, 2.50



SHORT T KEY For Lock Shield Valve

| | | |
|--------------------|------|-----|
| Plain Brass..... | each | .12 |
| Nickel Plated..... | " | .18 |



LONG T KEY

B1906

| Length.....inches | 3 | 6 | 9 | 12 |
|--|-----|-----|-----|------|
| For $\frac{1}{4}$ inch { Finished.....each | .25 | .35 | .45 | .55 |
| Sq. Stem, } Nickeled..... " | .35 | .50 | .60 | .75 |
| For $\frac{1}{2}$ inch { Finished..... " | .30 | .45 | .60 | .75 |
| Sq. Stem, } Nickeled..... " | .40 | .60 | .85 | 1.10 |

ADJUSTABLE MALLEABLE IRON EXTENSION RODS

For Valves and Cocks with $\frac{1}{4}$ and $\frac{1}{2}$ Inch Square Stems

B1907

| | | | | | | |
|-------------------|-----|------|-------|-------|-------|-------|
| Length.....inches | 6x9 | 9x12 | 12x15 | 15x18 | 18x21 | 21x24 |
| Price.....each | .35 | .40 | .45 | .55 | .65 | .75 |



BRASS FLOOR PLATE

For Valve Stem or Rod

B1908

For $\frac{1}{4}$ inch Sq. Stem, ea. Fin., 20c.; Nickel Plated, 30c.For $\frac{1}{2}$ inch Sq. Stem, same price as above.

GAS STOVE TUBING NIPPLES

B1909

Brass, Male or Female Thread

Pipe Thread, $\frac{3}{8}$ in., each, 25c.; $\frac{1}{2}$ in., each, 30c.

COVERED TUBING

MOHAIR TUBING

With Metal Connections for Drop Lights, etc.



B1918

In 4 to 12 foot lengths.

Drop Light Tubing. Per foot, 12c.

Cigar Lighter Tubing, 18, 24, and 36 in. lengths.

Each, 40c., 50c., 70c.

RUBBER TUBING



B1920

See Rubber Hose, etc., in this catalogue.

GAS FITTER CEMENT



B1921

Price per pound, 20c.

With Rubber Sockets for Gas Stoves



B1919

In 2 to 12 foot lengths.
Per foot, 10c.

Two foot or 3 foot lengths are figured as 4 feet.

STREET LAMP
For Natural Gas

B1923

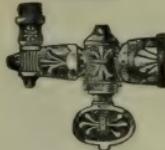
Made with socket for wood post, or with socket to slip onto 2 inch iron pipe.

Price, including glass, \$6.00.

Can be used with Jumbo, Argand, or Incandescent Burners.

BRASS GAS FIXTURE FITTINGS

L BURNER COCK



B1950

TWO LIGHT PENDANT COCK



B1951

L PENDANT COCK



B1952

Per Dozen

Per Dozen

Per Dozen

| | |
|-----------------------------|------|
| 1/2 inch..... | 6.20 |
| 5/8 "..... | 5.20 |
| 1/4 "..... | 4.55 |
| 1/8 "..... | 4.25 |
| 3/8 or 1/4 in., 4 in. long. | 8.25 |

| | |
|---------------------|-------|
| 5/8 X 3/8 inch..... | 10.25 |
| 5/8 X 1/4 "..... | 9.10 |
| 5/8 X 1/8 "..... | 9.10 |
| 1/4 X 1/4 "..... | 9.10 |
| 1/4 X 1/8 "..... | 8.45 |
| 1/8 X 1/8 "..... | 8.45 |

| | |
|---------------------|------|
| 5/8 X 3/8 inch..... | 5.85 |
| 5/8 X 1/4 "..... | 5.20 |
| 5/8 X 1/8 "..... | 5.20 |
| 1/4 X 1/4 "..... | 5.20 |
| 1/4 X 1/8 "..... | 4.90 |

Can be furnished Oxidized Copper Finish, to order.

PILLAR COCK



B1953

STRAIGHT COCK



B1954

BRACKET SWING COCK



B1955

Per Dozen

Per Dozen

Per Dozen

| | |
|---------------|------|
| 1/2 inch..... | 5.20 |
| 5/8 "..... | 4.55 |
| 1/4 "..... | 4.25 |
| 1/8 "..... | 3.90 |

| | |
|---------------------|------|
| 5/8 X 1/2 inch..... | 6.20 |
| 5/8 X 3/8 "..... | 4.90 |
| 5/8 X 1/4 "..... | 4.55 |
| 1/4 X 1/4 "..... | 4.55 |
| 1/4 X 1/8 "..... | 4.25 |
| 1/8 X 1/8 "..... | 3.90 |

| | |
|---------------------|------|
| 5/8 X 3/8 inch..... | 9.10 |
| 5/8 X 1/4 "..... | 8.45 |
| 5/8 X 1/8 "..... | 8.15 |
| 1/4 X 1/4 "..... | |

Can be furnished Oxidized Copper Finish, to order.

HOSE COCK



B1956

INDEPENDENT COCK



B1957

STRAIGHT NOZZLE



B1958

SIDE NOZZLE



B1959

STIFF JOINT



B1960

Per Dozen

Per Dozen

Per Dozen

Per Dozen

Per Dozen

| | | | | |
|------------------------|-------------------|-------------------|-----------------|-----------------------|
| 1/2 inch.... 5.55 | 5/8 inch.... 6.50 | 1/2 inch.... 3.00 | 5/8 inch.. 2.60 | 5/8 x 1/2 in.... 3.25 |
| 5/8 ".... 4.90 | | 5/8 ".... 1.95 | 5/8 ".... 1.65 | 5/8 x 1/2 in.... 2.60 |
| 1/4 ".... 4.55 | | 1/4 ".... 1.65 | 1/8 ".... 1.00 | 5/8 x 3/8 in.... 1.95 |
| With Male Thread | | 1/8 ".... 1.00 | | 5/8 x 1/4 ".... 1.85 |
| 1/2 inch Male.... 5.55 | | | | 5/8 x 1/6 ".... 1.55 |
| 5/8 ".... 5.20 | | | | 5/8 x 1/4 ".... 1.50 |
| 1/4 ".... 4.90 | | | | 5/8 x 1/8 ".... 1.40 |

Can be furnished Oxidized Copper Finish, to order.

BRASS GAS FIXTURE FITTINGS

Quoted on application.

REVOLVING PENDANT COCK



B1961

UNIVERSAL PENDANT COCK



B1962

UNIVERSAL BRACKET SWING COCK



B1963

UNIVERSAL SWING



B1964

MIDDLE SWING TOP SWING



B1965



B1966

BRACKET BODY



B1967

PILLAR BODY



B1968

CONNECTING BALL



B1969

Can also be furnished in Oxidized Copper Finish, to order.

BRACKET BACK



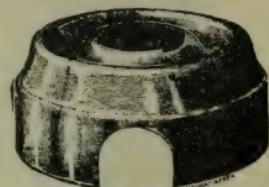
B1970

CEILING PLATE



B1971

BOX PLATE



B1972

| | | | | | |
|----------------------|------|----------------------|------|----------------------|------|
| 2½ in. Diam.....doz. | .40 | 2½ in. Diam.....doz. | .60 | 2½ in. Diam.....doz. | 2.00 |
| 3 " " " | .60 | 3 " " " | 1.00 | | |
| 4 " " "" | 1.25 | 4 " " "" | 2.00 | | |

Brass or Oxidized Copper Finish.

BURNER CUP



B1973

GLOBE HOLDER



B1974

| | | | | | |
|---------------|-----------|-----|-------------|-----------|------|
| Stamped..... | per dozen | .20 | 4 inch..... | per dozen | 1.10 |
| Polished..... | " | .30 | 5 " | " | 1.25 |

Brass or Oxidized Copper Finish.



B1976

BRASS CASING

For Gas Fixtures

$\frac{1}{2}$ in. to cover $\frac{1}{8}$ in. Pipe. $\frac{5}{8}$ in. to cover $\frac{3}{4}$ in. Pipe.
 $\frac{3}{4}$ in. to cover $\frac{5}{8}$ in. Pipe.

Price, \$1.00 per pound.

COMMON ROUND GAS BRACKETS

FINISHED GILT, OR OXIDIZED COPPER

STIFF



B1977

Price each .65

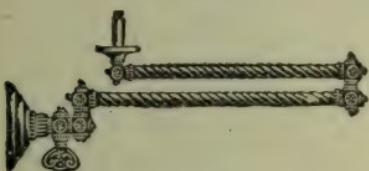
ONE SWING



B1978

Price each .85

TWO SWING

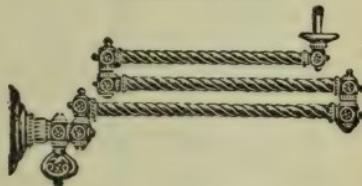


B1979

Price each 1.30

Universal Bracket.... " 1.85

THREE SWING



B1980

Price each 1.85

Universal Bracket.... " 2.35

SQUARE POLISHED BRACKETS

POLISHED BRASS OR OXIDIZED COPPER FINISH

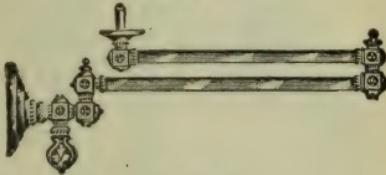
ONE SWING



B1981

Price each 1.50

TWO SWING

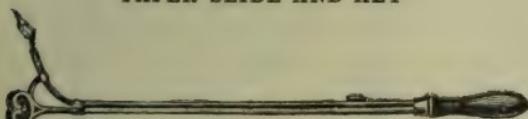


B1982

Price each 2.10

STIFF BRACKET—Not Illustrated
Price each .953-SWING BRACKET—Not Illustrated
Price each 2.75

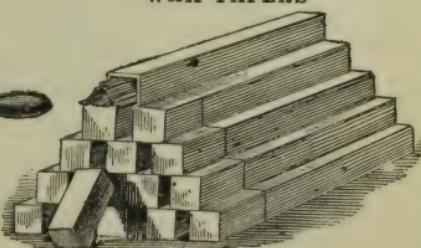
TAPER SLIDE AND KEY



B1983

Key per doz. 6.00

WAX TAPERS



B1984

Per box15

No. 0

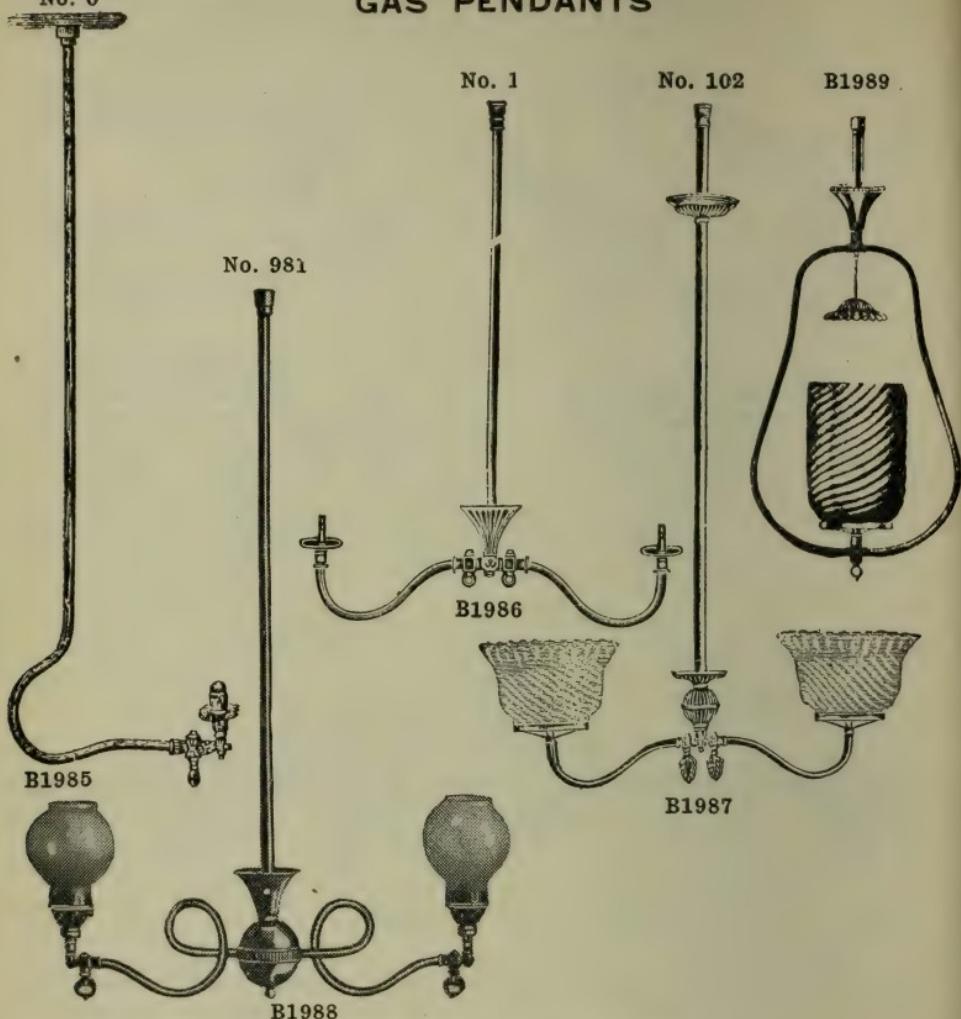
GAS PENDANTS

No. 1

No. 102

B1989

No. 981



BRASS OR OXIDIZED COPPER FINISH

| | | |
|---|------|------|
| B1985 One Light, 30 inch drop..... | each | 1.50 |
| " " 36 " " | " | 1.75 |
| B1986 Two " 36 " " 18 inch Spread..... | " | 3.00 |
| Three " 36 " " 9 " Arms..... | " | 4.00 |
| B1987 Two " 36 " " 18 " Spread..... | " | 4.00 |
| Three " 36 " " 9 " Arms | " | 5.00 |
| B1988 Two " 36 " " 20 " Spread..... | " | 5.00 |
| Three " 36 " " 10 " Arms..... | " | 6.00 |
| B1989 One " 30 or 36 inch drop, Hall Light..... | " | 4.00 |

Glassware, Burners, Ceiling Plates, Cups and Tips are extra.

ILLUMINATING GAS BURNERS

BRASS PILLAR



B1990
Per Gross
2.00

LAVA TIP



B1991
Per Gross
2.00

BLIND PILLARS



B1991½
Per Gross
4.00

EMPIRE



B1992
Per Gross
9.00

EMPIRE BASE



B1992½
Per Gross
4.50

NATURAL GAS BURNERS

IRON BURNER
BATWING OR
FISHTAIL

B1992½
Per Gross
10.00

JUMBO



B1993
Per Dozen
1.50

JUMBO TIP



B1994
Per Dozen
.90

NEW MARKET



B1995
Per Dozen
1.00

SELF LIGHTING



B1995½
Per Dozen
10.00

MATCHLESS BYPASS



B1995½
Per Dozen
6.00

STORK NECK



B1996
Per Dozen
2.50

DROP LIGHT SOCKET



B1997
Per Dozen
2.50

CIGAR LIGHTER



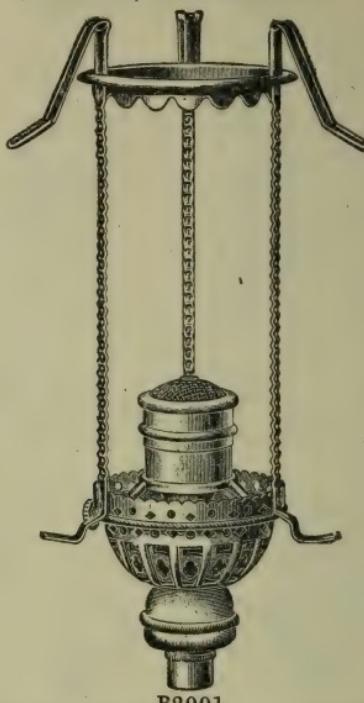
B1998
Each
As illustrated.....2.00
With 2-ft. Tubing,
Goose Neck and
Socket.....3.00

INCANDESCENT BURNERS

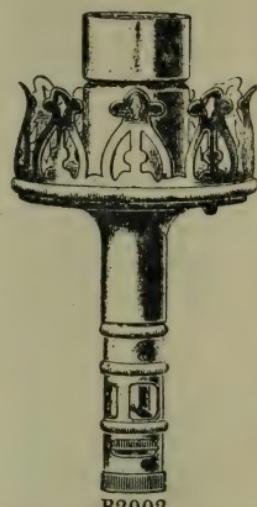
No. 2 B
GALLERY BURNER

B2000

No. 1 B, POST BURNER



B2001

No. 3 B
BURNER

B2002

| | | | | | |
|-----------------|-------|-----------------|-------|-----------------|-------|
| Per Dozen | 1.40 | Per Dozen | 1.75 | Per Dozen | 3.00 |
| " 100 | 10.50 | " 100 | 13.50 | " 100 | 22.50 |

No. 84 B



B2003

WELSBACH
BURNERS

B2004

Improved needle-valve gas adjustment.
Bright dipped finish.

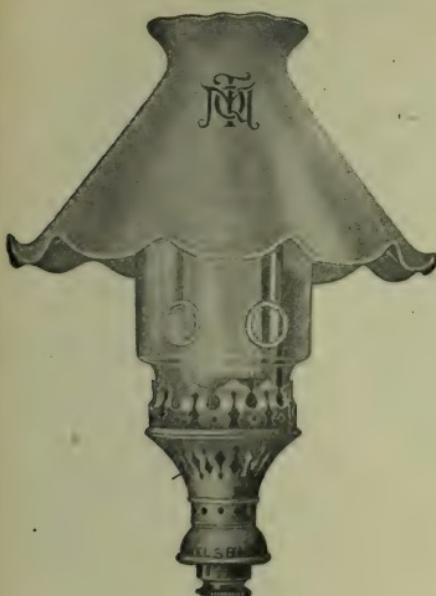
Per dozen, \$2.40. Per 100, \$18.40.

Above for use with 2 inch glassware. By means of No. 66 deck plate all styles of standard or air-hole glassware may be used.

A new Burner, with improved center-hole regulating bunsen.

Per dozen, \$5.00. Per 100, \$39.00.

WELSBACH BOXED LIGHTS

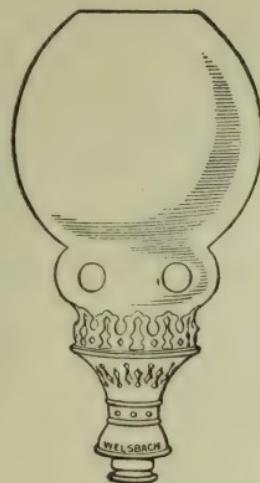


B2005

Boxed complete with No. 310 cylinder.
No. 196 Junior J Brand Welsbach mantle.
No. 316 new crimped cone opal shade.

| | |
|-------------------------------------|------|
| Price, complete, doz. lots.....each | 1.35 |
| " " 100 " " " | 1.25 |

No. 316, Opal shades only, per doz. \$4.40.
P'k'ge, 16 doz. shades, @ \$4.00 per doz.



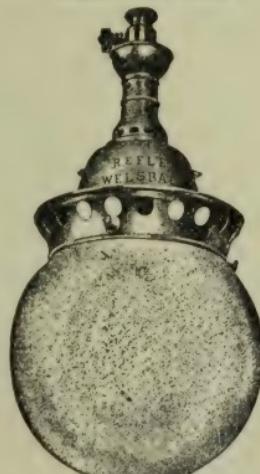
B2006

Boxed complete, with No. 302 opal globe.
No. 197 J Brand Welsbach mantle.

| | |
|------------------------------------|------|
| Price, complete, doz. lots....each | 1.10 |
| " " 100 " " " | 1.00 |

Price list, No. 302 Globe, see B2023.

WELSBACH "REFLEX" INVERTED LAMP, No. 244



B2007

IMPROVED INVERVED LAMPS



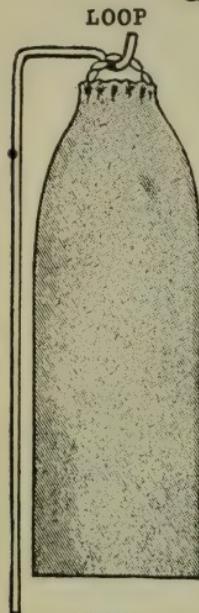
B2008

| | |
|-------------------------|------|
| Boxed complete.....each | 2.00 |
| Extra Mantles....." | .50 |
| Extra Globes....." | .60 |

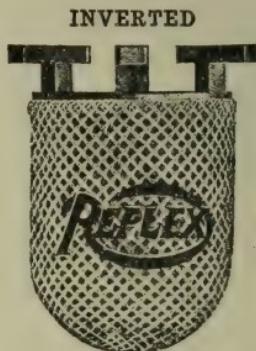
| | | |
|----------------------------|----------|------|
| Boxed complete | net. ea. | 1.75 |
| Extra Mantles | " doz. | 3.25 |
| " Globes, 5-in., No. 442 " | " " | 2.75 |
| " Inner Cylinder No. 317 " | " " | 2.75 |

No. 317, Cylinder, Opal or Roughed,
add dozen, 25 cents.

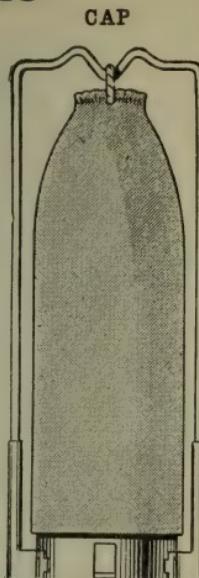
GAS AND GASOLINE MANTLES



B2010



B2013



B2012

| | | | Per Doz. | Per 100 |
|----------|----------|----------------------------|-------------|------------|
| Atlas | Loop | Mantle, Single Weave | 1.40 | 10.00 |
| " | Cap | " " | 2.00 | 15.00 |
| Garland | " | " " | 2.70 | 18.00 |
| Empire | " | Double Weave | 2.70 | 18.00 |
| " | Loop | " " | 3.15 | 22.50 |
| King | Cap | Triple Weave | 3.50 | 25.00 |
| Reflex | Inverted | " " | 3.00 | 20.25 |
| Improved | " | " " | 3.00 | 20.25 |
| " | " | Single Weave | 2.70 | 18.00 |
| No. 2L | Gasoline | " 3½" Gravity | 2.00 | 15.00 |
| " 26L | " | Double Weave " | 2.70 | 18.00 |
| " 55L | " | 4½" Pressure | 3.15 | 22.50 |
| " 56L | " | " " | 3.00 | 21.00 |

OPAL SMOKE SHADE

No. 74, OPAL SHADE



B2015



B2016

| | Per Doz. | Original Package | Broken Package |
|----------------------|-------------|---------------------|-------------------|
| Broken Package | 1.80 | 1.30 | 1.55 |
| Original " | 1.65 | 1.50 | 1.80 |
| | | 1.70 | 2.00 |

Original package contains 6 dozen.

Boxing on Glassware, extra, at cost.

GLASSWARE FOR INCANDESCENT GAS BURNERS

FROST BOTTOM
CHIMNEYB2019
Price Per Dozen

| | |
|--------------|------|
| 8-inch | 1 30 |
| 7 " | 1 25 |
| 6 " | 1 20 |

If in original package,
6 dozen.
Per doz. 8-in., \$1.10; 7-in.,
\$1.05; 6 in., \$1.00.

No. 201 CYLINDER



B2020

For Post Frame
Per Dozen, \$1.50.

If in full package of 6
dozen, per doz., \$1.30.

No. 66 GLOBE



B2021

4½-inch
Opal or Acid-roughed Top
and Bottom.

Per dozen, \$1.25.

If in full package (6 doz.),
per dozen, \$1.10.

5-inch Globes special.

AIR-HOLE GLASSWARE

No. 195



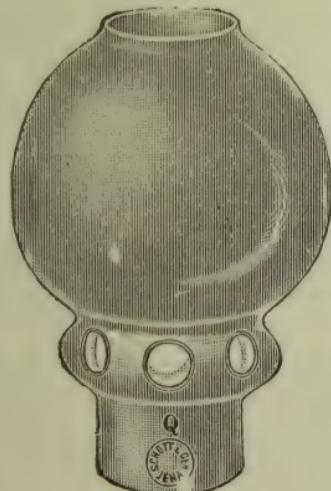
B2022

Clear Glass

No. 195, Cylinder
Per dozen, \$2.40.

If in full package (30 doz.),
per dozen, \$2.20.

Q GLOBE



B2023

Q Air-Hole Opal
Per dozen, \$2.80.

In 6 dozen packages, at
\$2.60.

MICA ARGAND
CHIMNEY

B2024

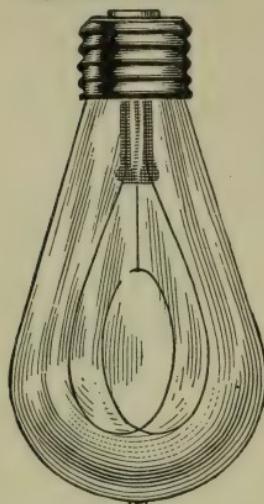
One Piece

| | | |
|-------------|----------|------|
| 6-inch..... | per doz. | 4.00 |
| 7 " | " | 5.50 |
| 8 " | " | 6.25 |

Boxing on Glassware, extra, at cost.

INCANDESCENT LAMPS
EQUALITY TYPE

SHELBY TYPE



B2030



B2031

| Candle Power | Voltage | Std. Pkg. | Clear | Frost |
|-------------------|-----------------------|-----------|-------|-------|
| 2 to 25 | 45 to 130 | 240 | .20 | .225 |
| 32 and 50 | 45 to 130 | 100 | .30 | .33 |
| 8, 10, 16, and 25 | 20 to 45 & 200 to 250 | 240 | .22 | .245 |
| 32 and 50 | 20 " 45 " 200 " 250 | 100 | .40 | .43 |

Add 2½c. per lamp for T. H. West. or Comb. Base.

“HYLO”

| | | |
|--|------|-----|
| 8 and 16 Candle Power, 45 to 130 Volt, Clear | each | .60 |
| 8 " 16 " " over 130 " " | " | .65 |
| 32 " " 45 to 130 " " | " | .70 |
| 32 " " over 130 " " | " | .75 |

“TANTALUM”

| | |
|-------------------------------|-----|
| Regular, 40 Watts, Clear..... | .60 |
|-------------------------------|-----|

“GEM”

| | | | |
|-------------------------------|------|-------------------------------|------|
| 50-W, 108-110-112 Plain..... | .25 | | |
| “ 108-110-112 Frosted.... | .275 | | |
| 100-W, 108-110-112 Plain..... | .35 | { No. 2. D Reflector & Holder | .70 |
| “ 108-110-112 Frosted.... | .38 | | |
| 125-W, 108-110-112 Plain..... | .45 | { “ 3. D “ “ “ | .90 |
| “ 108-110-112 Frosted.... | .485 | { “ 4. D “ “ “ | 1.10 |
| 187-W, 108-110-112 Plain..... | .65 | { “ 5. D “ “ “ | 1.30 |
| “ 108-110-112 Frosted.... | .69 | | |
| 250-W, 108-110-112 Plain..... | .80 | | |
| “ 108-110-112 Frosted.... | .85 | | |

SOCKETS

EDISON SOCKET
Fiber Lined



B2032

WEATHER-PROOF PORCELAIN SOCKET



B2033

WATER-PROOF SOCKET



B2034

STANDARD EDISON SOCKETS—Fiber Lined, 250 Volts

| | | | | | |
|---------------------|---------------|---------------|-----------------------|---------------|---------------|
| List Number | 9386 | 50760 | List Number.. | 9392 | 50768 |
| Cap.....inches | $\frac{1}{8}$ | $\frac{3}{8}$ | Cap..... .....,inches | $\frac{1}{8}$ | $\frac{3}{8}$ |
| Standard Package.. | 500 | 250 | Standard Package.... | 500 | 250 |
| Price,with Key each | .33 | .39 | Price, Keyless.. each | .30 | .36 |

WEATHER-PROOF PORCELAIN SOCKETS

| List Number..... | 9366 | 9388 | 1250 |
|-----------------------|--------|-----------------|--------------|
| Description..... | Edison | Thomson-Houston | Westinghouse |
| Standard Package..... | 250 | 200 | 200 |
| Price.....each | .35 | .35 | .35 |

Weather-proof Sockets are fitted with 12 inches of stranded rubber covered wire.

WATER-PROOF SOCKETS—Packed 10 in a Paper Box.

| List Number..... | 116½ | 117½ | 118½ |
|-------------------|---------------|-----------------|---------------|
| Description..... | Edison | Thomson-Houston | Westinghouse |
| Cap.....inches | $\frac{3}{8}$ | $\frac{3}{8}$ | $\frac{3}{8}$ |
| Price.....per 100 | 50.00 | 50.00 | 50.00 |

SOCKETS, RECEPTACLES, ETC.

EDISON WALL SOCKETS—Fiber Lined

PORCELAIN RECEPTACLES



B2035



B2036



P2027

B2035 B2036
EDISON WALL SOCKETS, 250 VOLTS

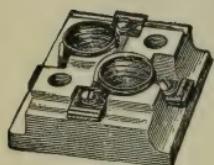
B2031
PORCELAIN RECEPTACLES

| | | | | |
|-----------------------|----------|---------|----------------|-----------------|
| List Number..... | 9184 | 9185 | 9171 | 50757 |
| Description..... | With Key | Keyless | Brass Fittings | Copper Fittings |
| Standard Package..... | 250 | 250 | 500 | 250 |
| Price.....each | .44 | .40 | .12 | .20 |

FUSE PLUGS FOR USE WITH EDISON PLUG CUT-OUTS - B2038

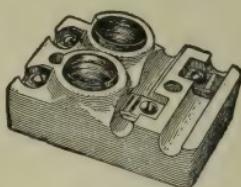
EDISON PLUG CUT-OUTS

No. 8020



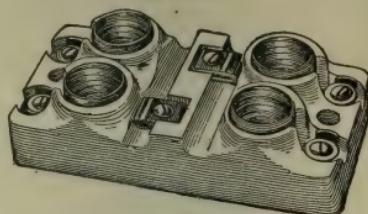
B2041

No. 1935



B2042

No. 2587



B2043

No. 2965



B2040

| | | | |
|-------------------|------------------|------------------|--|
| List Number | 2569 | 2965 | 8020 |
| Description | Single Pole Main | Double Pole Main | Double Pole Single or Double Cross Over Branch |
| Price.....each | .18 | .30 | .32 |

| List Number.... | 1935 | 2587 | 2165 | 2199 | 8042 | 2135 |
|------------------|---------------------------|---------------------------|-------------|---------------------------|----------------------|----------------------|
| Description..... | Double Pole Single Branch | Double Pole Double Branch | 3 Wire Main | 3 to 2 Wire Double Branch | 3 Wire Single Branch | 3 Wire Double Branch |
| Price.....each | .32 | .62 | .44 | .64 | .54 | .90 |

P. K. ROSETTES

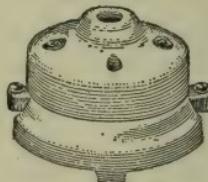
No. 810



B2045

Each, 26c.
For Cleat Work.

No. 814



B2046

Each. 36c.
For Concealed Work.

No. 815

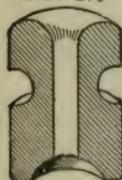


B2047

Each, 36c.
For Moulding Work.

PORCELAIN INSULATOR

No. 4½



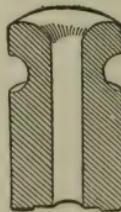
B2048

No. 5

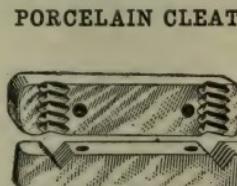


B2049

No. 5½



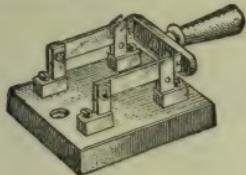
B2050



Quoted on application.

B2051

| Number | Height Inches | Diameter Inches | Hole Inches | Groove Inches | Standard Package | Price Per 1000 |
|--------|------------------|--------------------|----------------|------------------|---------------------|-------------------|
| 4½ | 1 $\frac{7}{8}$ | 1 $\frac{1}{2}$ | $\frac{3}{8}$ | $\frac{7}{16}$ | 2000 | 14.00 |
| 5 | 1 $\frac{1}{4}$ | 1 | $\frac{1}{4}$ | $\frac{5}{8}$ | 5000 | 9.00 |
| 5½ | 1 $\frac{9}{16}$ | 1 | $\frac{1}{4}$ | $\frac{5}{8}$ | 5000 | 9.00 |

SWITCHES**DOUBLE POLE (Slate Base)**

B2052

Type "B" Switches are made to conform to the requirements of the National Board of Fire Underwriters, are well made, substantial throughout, and insure a good contact.

They are made in Plain Finish, Front Connections only.

This is an All-Copper Switch at a medium price. These switches can be fitted for any of the Enclosed Fuses on the market, with or without Clips or Holders, as desired. Barrier will be inserted in Fuse Gap, when so ordered, at an additional cost of 15 per cent to list.

| Amp. | Cat. No. | S. P. | Cat. No. | S. P. Fused | Cat. No. | S. P. D.T. | Cat. No. | S. P. D.P. Fused | Cat. No. | D.P. | Cat. No. | D.P. Fused | Volts |
|------|----------|-------|----------|----------------|----------|---------------|----------|------------------------|----------|------|----------|---------------|-------|
| 15 | 50 | .40 | 54 | .50 | 58 | .64 | 62 | .94 | 66 | .53 | 70 | .66 | 250 |
| 25 | 51 | .55 | 55 | .69 | 59 | .88 | 63 | 1.30 | 67 | .82 | 71 | 1.02 | 250 |

| Amp. | Cat. No. | D. P. D.T. | Cat. No. | D. P. D.T. Fused | Cat. No. | 3 P. | Cat. No. | 3 P. Fused | Cat. No. | 3 P. D.T. | Cat. No. | 3 P. D.T. Fused | Volts |
|------|----------|---------------|----------|------------------------|----------|------|----------|---------------|----------|--------------|----------|-----------------------|-------|
| 15 | 75 | .84 | 79 | 1.24 | 83 | .79 | 87 | .98 | 91 | 1.26 | 95 | 1.84 | 250 |
| 25 | 76 | 1.30 | 80 | 1.92 | 84 | 1.23 | 88 | 1.54 | 92 | 1.96 | 96 | 2.88 | 250 |

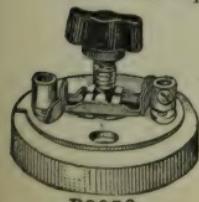
TYPE "B" SWITCHES

Fitted with National Electrical Code Fuse Holders

| Amp. | Cat. No. | S. P. Fused | Cat. No. | S. P. D.T. Fused | Cat. No. | D. P. Fused | Cat. No. | D. P. D.T. Fused | Cat. No. | 3 P. Fused | Cat. No. | 3 P. D.T. Fused | Volts |
|------|----------|----------------|----------|------------------------|----------|----------------|----------|------------------------|----------|---------------|----------|-----------------------|-------|
| 15 | 36 | .64 | 38 | 1.30 | 40 | .94 | 42 | 1.90 | 44 | 1.40 | 46 | 2.90 | 250 |
| 25 | 37 | .83 | 39 | 1.70 | 41 | 1.30 | 43 | 2.62 | 45 | 1.96 | 47 | 4.00 | 250 |

Double Break Switches, add 50 per cent.

Four Pole Switches, two and one-half times price of Double Pole.
110 Volt Spacing, same price as 250 Volt.



B2053

PERKINS SWITCH-220 VOLT

With Composition Key

| List No. | B No. | | Standard Package | List Price |
|----------|-------|-----------------------|------------------|------------|
| 19520 | 2000 | 5 Ampere, Single Pole | 500 | .26 |
| 19521 | 2001 | 10 " " " | 250 | .33 |

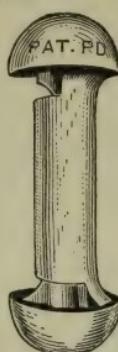
CORD ADJUSTERS
No. 5400



B2055

List No. 5400 Universal Cord Spool, made of hard wood, natural finish.... per 100 6.00

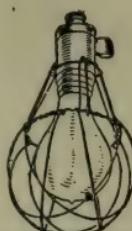
SHADE HOLDERS
No. 90282



B2056

| | |
|--|------|
| List No. 90282 2½ inch Shade Holder..... per dozen | 1.20 |
| List No. 90282A 3¼ inch Shade Holder...per doz. | 2.00 |

WIRE GUARDS
Closed No. 5929 Open



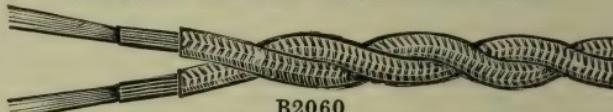
B2057

List No. 5929 Tin-ned.... per dozen 2.00

Guard opens, allowing the removal of lamp without detaching from socket. Will stay open or closed; no hooks or springs to bother with.

Fuse Wire quoted on application. When ordering, state plainly for what purpose it is to be used.

FLEXIBLE INCANDESCENT LAMP CORD



B2060

Conductor Composed of No. 30 Wire. National Code Standard

| B. & S. Gauge | 22 | 20 | 18 | 16 | 14 | 12 | 10 |
|---------------------------------|----|----|----|----|----|----|-----|
| No. of Wires to Conductor | 10 | 14 | 16 | 25 | 40 | 60 | 118 |

Prices Cotton Covered or Silk Covered quoted on application.

RUBBER COVERED WIRE National Code Standard

SINGLE BRAID, SOLID

DOUBLE BRAID, SOLID



B2061

B2062

| B. & S. Gauge..... | 18 | 16 | 14 | 12 | 10 | 8 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|---------------------------------------|----|----|----|----|----|---|---|---|---|---|---|---|---|
| Single or Double Braid, per 1000 feet | | | | | | | | | | | | | |

Prices on application.

WEATHERPROOF WIRE -- Soft Drawn Copper, Triple Braided

| B. & S. Gauge..... | 000 | 0) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 14 | 16 | 18 |
|-----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|
| Approx. lbs., per 1000 feet | 629 | 495 | 407 | 310 | 250 | 199 | 164 | 135 | 111 | 74 | 53 | 35 | 25 | 15 | 11 |

The market price of weatherproof wire changes frequently. Prices on application.

FIRE AND W. P. WIRE QUOTED ON APPLICATION.

D. & W. ENCLOSED FUSES

NEW NATIONAL ELECTRIC CODE STANDARD—250 Volts

FOR SPRING CLIP

KNIFE BLADE PATTERN



B2065



B2066

FOR SPRING CLIP B2065

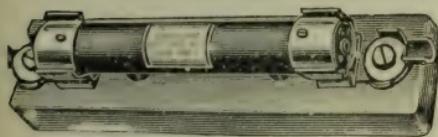
| | | | | | | | | | | | | |
|----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Length over all.....inches | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 |
| Capacity.....ampères | 3 | 6 | 8 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 50 | 60 |
| Package.....quantity | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Price.....each | .25 | .25 | .25 | .25 | .25 | .25 | .25 | .33 | .33 | .33 | .33 | .33 |

KNIFE BLADE PATTERN B2066

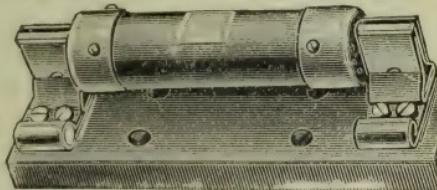
| | | | | | | | | | | | | |
|----------------------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------|
| Length over all.....inches | 5 $\frac{1}{8}$ | 5 $\frac{1}{8}$ | 5 $\frac{1}{8}$ | 5 $\frac{1}{8}$ | 7 $\frac{1}{8}$ | 7 $\frac{1}{8}$ | 7 $\frac{1}{8}$ | 7 $\frac{1}{8}$ | 7 $\frac{1}{8}$ | 7 $\frac{1}{8}$ | 7 $\frac{1}{8}$ | |
| Capacity.....ampères | 70 | 80 | 90 | 100 | 110 | 120 | 125 | 150 | 150 | 200 | 200 | 200 |
| Package.....quantity | 50 | 50 | 50 | 50 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| Price.....each | .86 | .86 | .86 | .86 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Length over all.....inches | 8 $\frac{5}{8}$ | 8 $\frac{5}{8}$ | 8 $\frac{5}{8}$ | 8 $\frac{5}{8}$ | 10 $\frac{3}{8}$ | |
| Capacity.....ampères | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 600 | ..... | ..... | ..... |
| Package.....quantity | 25 | 25 | 25 | 25 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Price.....each | 3.40 | 3.40 | 3.40 | 3.40 | 5.20 | 5.20 | 5.20 | 5.20 | 5.20 | 5.20 | 5.20 | 5.20 |

D. & W. STANDARD CUT-OUTS

NEW NATIONAL ELECTRIC CODE STANDARD—250 Volts, Single Pole

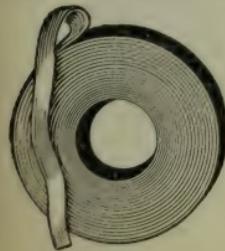


B2067



B2068

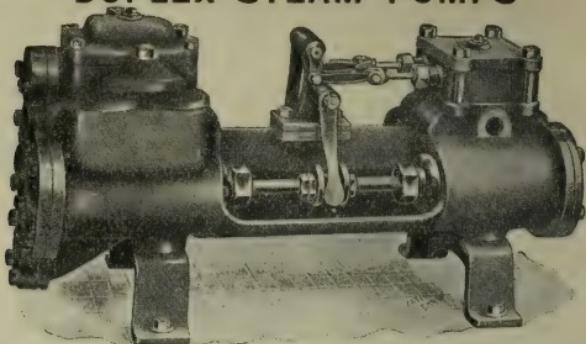
| | | | | | | |
|--------------------------|------|-------|-----------------|-----------------|-----------------|------------------|
| Length over all ..inches | 2 | 3 | 5 $\frac{1}{8}$ | 7 $\frac{1}{8}$ | 8 $\frac{5}{8}$ | 10 $\frac{3}{8}$ |
| Capacity .....ampères | 1-30 | 31-60 | 61-100 | 101-200 | 201-400 | 401-600 |
| Package.....quantity | 50 | 50 | 50 | 50 | 25 | 10 |
| Price.....each | .50 | .96 | 1.30 | 2.40 | 6.40 | 9.20 |



B2070

Friction Tape**Rubber Tape**

Quoted on application.

DUPLEX STEAM PUMPS

B2100

Largest sizes are with Air Chambers.

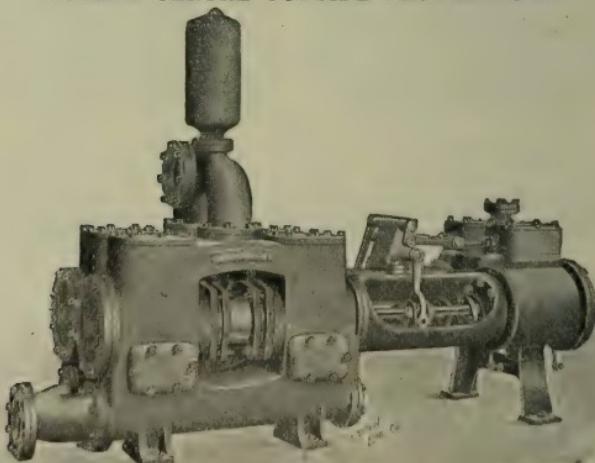
BOILER FEED PUMPS—Piston Pattern

Price List also applies to General Service Pumps.

| Number | Diameter of Steam Cylinder | Diameter of Water Piston | Length of Stroke | Price Standard Fitted | Price Brass Fitted | Number | Diameter of Steam Cylinder | Diameter of Water Piston | Length of Stroke | Price Standard Fitted | Price Brass Fitted |
|--------|----------------------------------|--------------------------------|------------------------|-----------------------------|--------------------------|--------|----------------------------------|--------------------------------|------------------------|-----------------------------|--------------------------|
| 2 | 2½ | 1½ | 2½ | 45.00 | 48.00 | 7½ | 6 | 4½ | 6 | 160.00 | 175.00 |
| 3 | 3 | 2 | 3 | 60.00 | 65.00 | 8 | 7 | 4½ | 8 | 220.00 | 245.00 |
| 4 | 3½ | 2¼ | 4 | 80.00 | 85.00 | 9 | 8 | 5 | 10 | 320.00 | 355.00 |
| 5 | 4½ | 2¾ | 5 | 98.00 | 106.00 | 10 | 10 | 6 | 10 | 400.00 | 440.00 |
| 5½ | 4½ | 3 | 5 | 105.00 | 112.00 | 11 | 12 | 6 | 12 | 560.00 | 620.00 |
| 6 | 5¼ | 3½ | 6 | 125.00 | 137.00 | 12 | 12 | 7 | 12 | 600.00 | 665.00 |
| 7 | 6 | 4 | 6 | 150.00 | 165.00 | 13 | 12 | 8 | 12 | 680.00 | 750.00 |

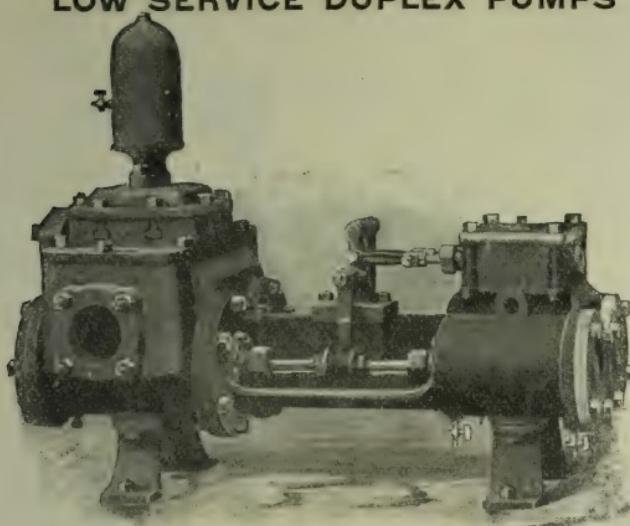
For Boiler Feed Service, air vessels are omitted on the smaller sizes.

Automatic Pump and Receiver, Single Acting Pumps, Fire Pumps and Centre Outside Packed Pumps quoted on application.

DUPLEX CENTRE OUTSIDE PACKED PUMP

B2101. Prices quoted on application.

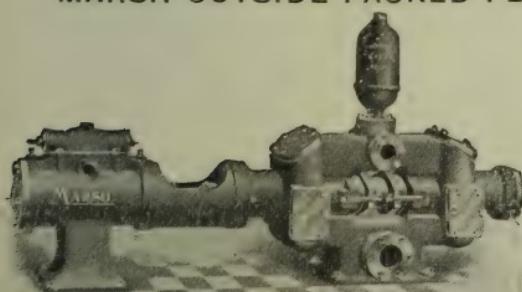
LOW SERVICE DUPLEX PUMPS



B2103

| Diameter of Steam Cylinder | Diameter of Water Pistons | Length of Stroke | Price Standard Fitted | Price Brass Fitted | Diameter of Steam Cylinder | Diameter of Water Pistons | Length of Stroke | Price Standard Fitted | Price Brass Fitted |
|----------------------------------|---------------------------------|------------------------|-----------------------------|--------------------------|----------------------------------|---------------------------------|------------------------|-----------------------------|--------------------------|
| 3 1/2 | 2 3/4 | 4 | 90.00 | 95.00 | 7 | 9 | 10 | 480.00 | 540.00 |
| 4 1/2 | 3 1/2 | 5 | 110.00 | 125.00 | 8 | 7 | 10 | 430.00 | 480.00 |
| 4 1/2 | 4 | 5 | 115.00 | 130.00 | 8 | 8 | 10 | 470.00 | 530.00 |
| 5 1/4 | 4 | 6 | 125.00 | 140.00 | 8 | 9 | 10 | 520.00 | 590.00 |
| 5 1/4 | 4 1/2 | 6 | 140.00 | 160.00 | 8 | 10 | 10 | 560.00 | 640.00 |
| 5 1/4 | 5 | 6 | 150.00 | 170.00 | 10 | 8 | 10 | 560.00 | 640.00 |
| 6 | 5 | 6 | 180.00 | 200.00 | 10 | 9 | 10 | 590.00 | 680.00 |
| 6 | 6 | 6 | 200.00 | 222.00 | 10 | 10 | 10 | 660.00 | 750.00 |
| 7 | 6 | 6 | 240.00 | 270.00 | 12 | 10 | 12 | 780.00 | 880.00 |
| 7 | 7 | 10 | 390.00 | 440.00 | 12 | 11 | 12 | 830.00 | 970.00 |
| 7 | 8 | 10 | 440.00 | 490.00 | 12 | 12 | 12 | 910.00 | 1030.00 |

MARSH OUTSIDE PACKED PLUNGER PUMPS



B2105

bers. The piston rods are of Tobin bronze, the plungers and glands of hard close-grained cast iron.

Dimensions and prices furnished on application.

Special catalogue of Marsh Pumps furnished if desired.

These pumps are favored by many engineers for high pressure or boiler feed service, and for handling liquids containing grit. As all leaks are visible, a casual glance is sufficient to determine just how efficiently the pump is working.

In construction, the steam end is of the standard Marsh type, the water end is made very heavy and strong, ample hand plates being provided for access to all valve cham-

MARSH STANDARD BOILER FEED PUMPS



B2106

FOR HIGH PRESSURE. REGULAR LINE

| Size | Steam Cylinder | Water Cylinder | Stroke | Gallons per Stroke | Gallons per Minute | Steam Pipe | Exhaust Pipe | Suction Pipe | Delivery Pipe | Floor Space | Horse Power | Weight Lbs. | Price |
|------|----------------|----------------|--------|--------------------|--------------------|------------|--------------|--------------|---------------|-------------|-------------|-------------|--------|
| B | 2½ | 1¾ | 2 | .0128 | 3.33 | 1¼ | 3/8 | ¾ | ½ | 7x14 | 20 | 45 | 30.00 |
| B B | 3 | 1¾ | 2½ | .0260 | 6.66 | 3/8 | 1½ | 1 | ¾ | 8x17 | 35 | 75 | 50.00 |
| C | 4 | 2¾ | 3 | .0575 | 10.83 | 3/8 | 1¾ | 1¾ | ¾ | 10x21 | 60 | 170 | 75.00 |
| C 2 | 4 | 2½ | 6 | .1275 | 16.66 | 3/8 | 2 | 1 | 1¼ | 10x32 | 100 | 300 | 125.00 |
| D | 5 | 3 | 3½ | .1071 | 16.66 | ½ | 2 | 1½ | 1 | 11x23 | 100 | 230 | 100.00 |
| E | 5 | 3 | 6 | .1836 | 25. | ½ | 2 | 2 | 1¾ | 10x32 | 150 | 320 | 150.00 |
| G | 5½ | 3½ | 6 | .2499 | 53. | ¾ | 1 | 2 | ½ | 12x34 | 200 | 400 | 175.00 |
| F | 6 | 3¾ | 8 | .3574 | 45. | ¾ | 1 | 2½ | 2 | 13x37 | 250 | 430 | 200.00 |
| F F | 6 | 4 | 8 | .4352 | 58. | ¾ | 1 | 2½ | 2 | 15x39 | 300 | 500 | 225.00 |
| H | 7 | 4 | 8 | .4352 | 58. | 1 | 1¼ | 2½ | 2 | 15x39 | 350 | 525 | 250.00 |
| I | 8 | 5 | 10 | .85 | 85. | 1 | 1½ | 3½ | 2½ | 18x48 | 500 | 1100 | 325.00 |
| I I | 8 | 5 | 12 | 1.02 | 100. | 1 | 1½ | 4 | 3 | 18x52 | 600 | 1225 | 375.00 |
| L | 10 | 6 | 12 | 1.46 | 146. | 1¼ | 1½ | 4 | 3 | 18x52 | 1000 | 1200 | 425.00 |
| M | 12 | 7¼ | 12 | 2.14 | 216. | 1½ | 2 | 5 | 4 | 19x56 | 1500 | 1650 | 500.00 |
| M M | 12 | 8 | 12 | 2.61 | 260. | 1½ | 2 | 5 | 4 | 19x56 | 1650 | 1650 | 525.00 |

Cast-iron Stand forming a drip pan, for sizes E, F, G or H Pumps, \$25.00. Other sizes special.

Capacity rating above is intended to represent maximum service recommended.

It is always advisable to run pumps at moderate speed, consequently select sizes large enough to meet ordinary requirements easily.

Reserve power in your pump is quite as important as in your boiler or engine.

NOTE—Sizes from I to M M are furnished in double base type unless specially ordered with single base like above illustration.

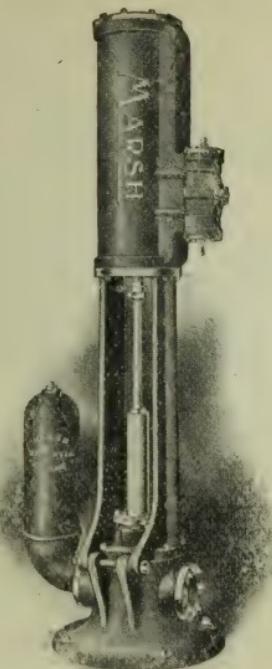
Low Service Boiler Feed Pumps, for Low Pressure Heating Service, **Low Service or Tank Pumps**, Automatic Pump and Receiver, Air Compressor, Vacuum Pumps, and Traction Engine Boiler Feed Pumps.

Description and prices furnished on application.

**MARSH
DEEP WELL
ENGINES**

B2109 is similar to B2108, except has Hinged Base and Air Chamber as illustrated on B2110.

B2110 with Hinged Base and Air Chamber has also a displacement cylinder, which equalizes the work of the piston on the up and down strokes, and makes the delivery steadier by double action. This pump also has special rod connection which permits engine to be dropped over for access to well, without uncoupling the well rod.



E2108

B2108 PLAIN YOKE BASE

B2110

| Diam. Steam Cylindr. | SIZE Stroke | Steam Pipe | Exhaust Pipe | Gas Pipe Well Rod Inches | Well Pipe | Delivery Pipe † | Floor Space | Weight Pounds | Price B2108 | Price B2109 | Price B2110 |
|----------------------------|----------------|---------------|-----------------|--------------------------------|-----------|--------------------|----------------|------------------|----------------|----------------|----------------|
| 4 | 6 | 3/8 | 3/4 | 3/8 | 2 | 1 1/4 | 8 x 8 | 80 | 40.00 | ..... | ..... |
| 4 | 8 | 3/8 | 3/4 | 3/8 | 2 | 1 1/4 | 8 x 8 | 85 | 50.00 | ..... | ..... |
| 5 | 12 | 1/2 | 3/4 | 1/2 | 2 1/2 | 2 | 12 x 12 | 200 | 80.00 | ..... | ..... |
| 6 | 12 | 3/4 | 1 | 1/2 | 3 | 2 1/2 | 12 x 12 | 250 | 100.00 | ..... | ..... |
| 6 | 24 | 3/4 | 1 | 3/4 | 3 | 2 1/2 | 18 x 18 | 450 | 175.00 | ..... | ..... |
| 6 | 36 | 3/4 | 1 | 3/4 | 3 | 2 1/2 | 18 x 18 | 500 | 250.00 | ..... | ..... |
| 7 | 24 | 1 | 1 1/4 | 3/4 | 3 | 2 1/2 | 18 x 18 | 480 | 200.00 | ..... | ..... |
| 7 | 36 | 1 | 1 1/4 | 3/4 | 3 | 2 1/2 | 18 x 18 | 525 | 275.00 | ..... | ..... |
| 8 | 24 | 1 | 1 1/2 | 1 | 5 | 3 1/2 | 22 x 22 | 900 | 250.00 | ..... | ..... |
| 8 | 36 | 1 | 1 1/2 | 1 | 5 | 3 1/2 | 22 x 22 | 920 | 300.00 | ..... | ..... |

HINGED BASE PUMPING ENGINES

| | | | | | | | | | | | |
|----|-----|-------|-------|-------|---|-------|---------|--------|-------|--------|--------|
| 6 | *24 | 2/4 | 1 | 2/4 | 4 | 3 1/2 | 22 x 22 | \$ 800 | ..... | 225.00 | 250.00 |
| 7 | *24 | 2/4 | 1 1/4 | 3/4 | 4 | 3 1/2 | 22 x 22 | 820 | ..... | 250.00 | 275.00 |
| 8 | *24 | 1 | 1 1/2 | 1 | 5 | 4 | 24 x 24 | 1150 | ..... | 300.00 | 325.00 |
| 10 | *24 | 1 1/2 | 2 | 1 1/2 | 6 | 5 | 30 x 30 | 1700 | ..... | 350.00 | 400.00 |
| 12 | *24 | 1 1/2 | 2 | 1 1/2 | 6 | 5 | 30 x 30 | 1875 | ..... | 400.00 | 450.00 |
| 14 | *24 | 2 | 2 1/2 | 1 1/2 | 7 | 6 | 32 x 32 | 2900 | ..... | 575.00 | 625.00 |
| 16 | *24 | 3 | 3 1/2 | 1 1/2 | 8 | 7 | 36 x 36 | 3150 | ..... | 650.00 | 700.00 |

* For 36-inch stroke add, to list of 6-inch and 7-inch sizes, \$75.00. 8-inch and larger sizes, \$50.00.

† Sizes apply to B2109. Diameter of plunger for B2110 is made according to order or requirements.

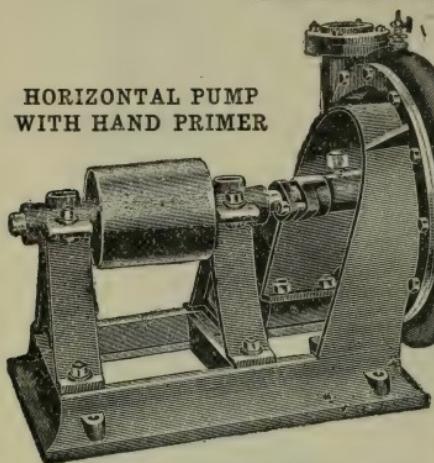
‡ For B2110 7x24 engine the steam pipe is 1-inch.

In filling orders for engines only, flanges for well pipe and delivery will be threaded our standard sizes as above, unless otherwise specified.

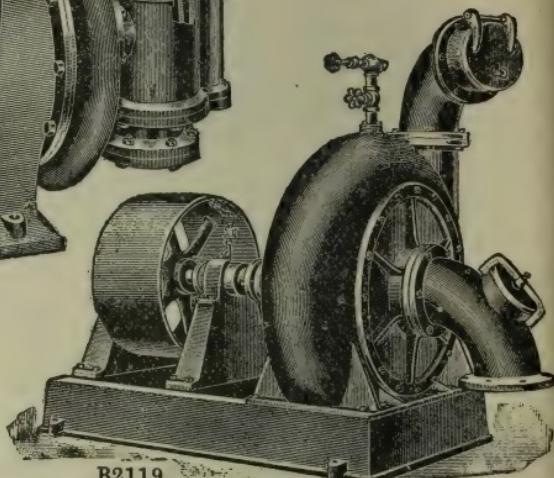
For capacity, etc., see special catalogue of Marsh Pumps.

§ Weights are for P2109. B2110 is approximately 20 per cent heavier.

CENTRIFUGAL PUMPS

HORIZONTAL PUMP
WITH HAND PRIMER

B2117

SAND AND
DREDGING PUMP

B2119

PRICES HORIZONTAL CENTRIFUGAL PUMPS

| Number | Suction Inches | Disch'ge Inches | Capacity Gallons | Pulley Inches | B2117 WITH PRIMER | B2118 WITHOUT HAND PRIMER | |
|--------|-------------------|--------------------|---------------------|------------------|-------------------------|---------------------------------|----------------|
| | | | | | Price Iron | Price Iron | Price Brass |
| 1½ | 2 | 1½ | 70 | 5 x 5 | 60.00 | 45.00 | 75.00 |
| 1¾ | 2½ | 2 | 90 | 6 x 5 | 75.00 | 60.00 | 100.00 |
| 2 | 3 | 2 | 120 | 6 x 6 | 95.00 | 75.00 | 140.00 |
| 2½ | 3½ | 2½ | 185 | 7 x 6 | 110.00 | 90.00 | 165.00 |
| 3 | 4 | 3 | 265 | 7 x 8 | 135.00 | 110.00 | 200.00 |
| 3½ | 4½ | 3½ | 360 | 8 x 8 | 145.00 | 120.00 | 230.00 |
| 4 | 5 | 4 | 470 | 10 x 8 | 160.00 | 130.00 | 250.00 |
| 5 | 6 | 5 | 735 | 10 x 10 | 200.00 | 165.00 | 410.00 |
| 6 | 8 | 6 | 1060 | 14 x 12 | 270.00 | 225.00 | 600.00 |
| 8 | 10 | 8 | 2000 | 20 x 12 | 375.00 | 310.00 | ..... |
| 10 | 12 | 10 | 3000 | 24 x 12 | ..... | 395.00 | ..... |
| 12 | 15 | 12 | 4300 | 30 x 14 | ..... | 500.00 | ..... |
| 15 | 18 | 15 | 7000 | Special | ..... | 850.00 | ..... |
| 18 | 20 | 18 | 10000 | Special | .. .. | 1300.00 | ..... |

Brass Fitted Pumps, quoted on application.

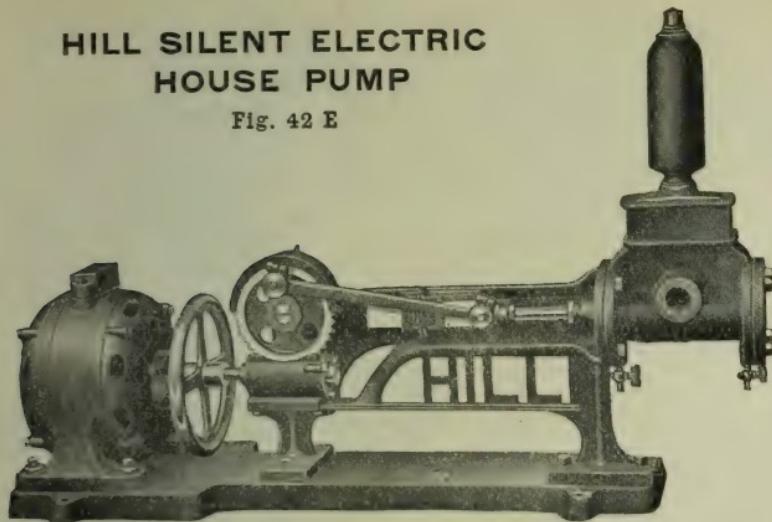
Vertical Submerged Pumps, quoted on application.

SAND AND DREDGING PUMPS—B2119

| Number | Suction and Disch'ge Inches | CUBIC YDS SOLIDS PER HR. PER C'T OF SOLIDS | | Pulley Inches | Horse-Power for Each 10 Feet of Elevation | Diameter of Solids Pump Will Pass Inches | Price Each |
|--------|--------------------------------------|---|------------|------------------|--|---|---------------|
| | | 10 Per Ct. | 20 Per Ct. | | | | |
| 4 | 4 | 14 | 28 | 12 x 12 | 4 | 2 | 210.00 |
| 6 | 6 | 30 | 60 | 18 x 12 | 8 | 4½ | 300.00 |
| 8 | 8 | 60 | 120 | 24 x 12 | 15 | 6 | 475.00 |
| 10 | 10 | 90 | 180 | 30 x 14 | 25 | 8 | 600.00 |
| 12 | 12 | 125 | 250 | 40 x 16 | 30 | 10 | 850.00 |

HILL SILENT ELECTRIC HOUSE PUMP

Fig. 42 E



B2120½

Especially for domestic uses, but can be used for a variety of purposes.
Dimensions over all: length, 3 ft. 10 in.; width, 15 in.; height, 28 in. at highest point.

| No. | With D.C.* Motor, 110 or 220 Volts | | With A.C.+ Motor, 1 Phase, 60 Cycle, 110 or 220 Volts | | With A.C.+ Motor, 2 or 3 Phase, 60 Cycle, 110 or 220 Volts | | Without Motor but with Sub-Base Type R | | Without Motor or Sub-Base with Pulley Type S | | Size of Motor | Size of Cylinder, Inches | Stroke, Inches | Elevation, Feet | Approx. Pressure Pounds | Capacity, Gallons | |
|-----|---------------------------------------|--------|---|--------|---|-----------|--|--------|---|----|---------------|-----------------------------|-------------------|--------------------|----------------------------|----------------------|--|
| | Type O | Type P | Type Q | Type R | Type S | Type R | Type S | Type R | Type S | | | | | | | | |
| 2B | 170.00 | 200.00 | 170.00 | 80.00 | 70.00 | 1/2 H. P. | 12 2 | 4 | 150 | 75 | 300 | | | | | | |
| 2½B | 175.00 | 205.00 | 175.00 | 85.00 | 75.00 | 1/2 H. P. | 12 1/2 | 4 | 100 | 50 | 480 | | | | | | |
| 3 | 180.00 | 210.00 | 180.00 | 90.00 | 80.00 | 1/2 H. P. | 12 1/2 | 4 | 60 | 30 | 720 | | | | | | |

*Direct Current. +Alternating Current.

Capacity is based on 1,800 R. P. M. Motors.

Cylinders are brass lined. Extra for air valve, \$2.50 net. A slight additional charge must be made in some cases for 500 volt motor. When ordering give Number and Type. And if with motor be sure to state voltage of electric current and if alternating current, also state phase and cycle.

2nd and 2½-in. cylinders are fitted for 1½-in. suction and 1-in. discharge; 3-in. cylinders for 1½-in. suction and 1¼-in. discharge—iron pipe.

Motor, sub-base and fly wheel can be left off and a pulley put on for belt drive if desired by any one that may already have his power installed. We believe the best results are obtained by pumping into either a closed (pneumatic) or open tank at certain intervals, when pump is run a sufficient length of time to fill the tank and then stopped. This can be attended to by means of automatic switching devices or by an attendant as desired.

This pump can be arranged so that an air valve (cut does not show it) can be attached to one end of pump cylinder, with which some air can be admitted to pump and forced with the water into the tank where it at once takes its place on top of the water. In the operation the water is thoroughly aerated.

AUTOMATIC TANK SWITCHES

| | |
|--|---------|
| Double Pole Float Switch for open tanks. List price..... | \$20.00 |
| Copper Float Pulleys, 15 ft. brass chain and weight | 10.00 |
| Attachment to operate switch by means of water pressure..... | 12.00 |

SPECIAL VERTICAL SMALL ELECTRIC PUMP

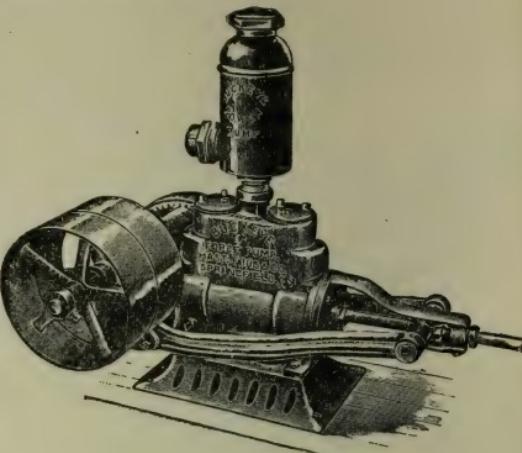
Quoted on Application.

BUCKEYE HORIZONTAL POWER PUMP
FOR WELLS NOT OVER 25 FEET DEEP

| No. | Bore | Stroke | Capacity per Revolution | Gear Ratio |
|-----|------|-----------------|-------------------------|------------|
| 105 | 3 | 4 $\frac{3}{4}$ | .306 | 5 to 1 |
| 118 | 4 | 5 | .544 | 5 to 1 |
| 134 | 5 | 5 | .850 | 5 to 1 |
| 136 | 6 | 12 | 2.937 | 6 to 1 |

| Size of Pulleys | Suction and Discharge | Iron | Brass Lined |
|-----------------|-----------------------|--------|-------------|
| 16x3 | 1 $\frac{1}{4}$ | 50.00 | 56.00 |
| 16x3 | 1 $\frac{1}{2}$ | 55.00 | 63.00 |
| 16x4 | 2 | 60.00 | 70.00 |
| 20x5 | 3 $\frac{1}{2}$ | 135.00 | 150.00 |

Brass Valve Seats, Rubber-faced Valves, and Drain Cocks to prevent freezing.

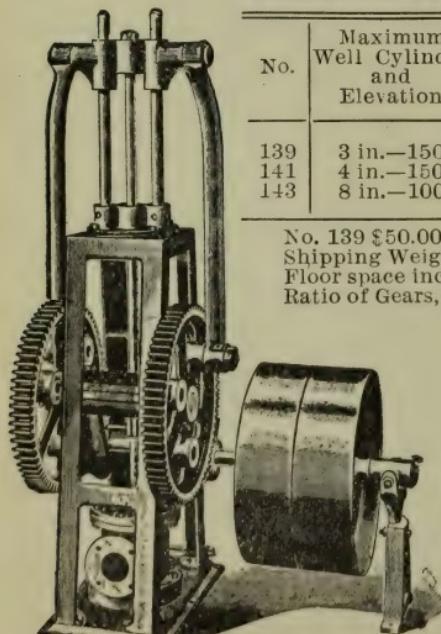


B2121

SMALL FLOOR SPACE

Can be run from ten to sixty revolutions per minute, according to the work required.

**BUCKEYE POWER WORKING HEAD
WITH TIGHT AND LOOSE PULLEYS**



| No. | Maximum Well Cylinder and Elevation | Stroke | Size Pulleys | Height to Center Pulley Shaft | Speed of Pulley Shaft |
|-----|-------------------------------------|-------------------------|--------------|-------------------------------|-----------------------|
| 139 | 3 in.—150 | 5, 7 $\frac{1}{2}$, 10 | 20 x 4 in. | 12 | 210 |
| 141 | 4 in.—150 | 8, 10, 12 | 20 x 4 in. | 14 $\frac{1}{2}$ | 180 |
| 143 | 8 in.—100 | 12, 16, 20 | 30 x 6 in. | 19 | 150 |

No. 139 \$50.00, No. 141 \$75.00, No. 143 \$150.00.

Shipping Weight 400 lbs., 600 lbs., and 1000 lbs.

Floor space inches 10 x 18, 13 x 22 and 18 x 29.

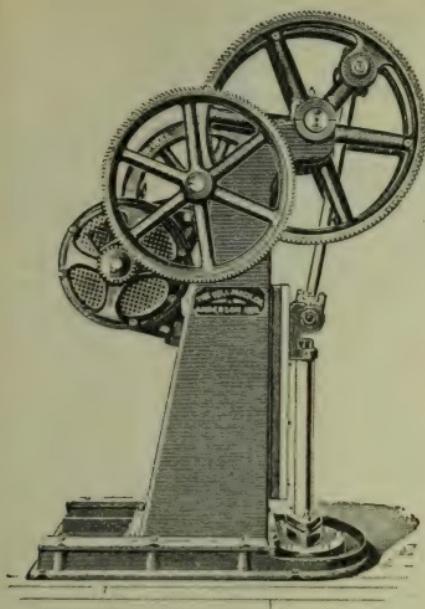
Ratio of Gears, six to one.

If water is to be forced to any considerable height above pump use air chamber.

Price of Air Chamber with Tee for connection in discharge pipe, with 2-in. Tee \$5.00, with 3-in. Tee \$10.00

The frame is hinged to the base and by disconnecting the piston rod just above the packing nut and removing the four cap screws which attach the frame to the base, the body of the pump can be hinged out of the way when removing the plunger rod and valves from the well.

B2122



HILL ELECTRIC PUMPING HEAD

B2123

For Deep Wells

Direct Connected. Also made with
Chain Drive

On the Chain Drive Head the motor is attached to a bracket in practically the same location as shown, and special silent sprocket wheels and chain are provided instead of the gear wheels illustrated.

This working head is also made if desired with Tight and Loose Pulleys for Belt.

DIMENSIONS AND PRICE LIST, WITHOUT MOTOR

| Stroke and No., Inches | Maximum Well Cylin- der and Ele- vation | Gear Ratio | Size of Base, Inches | Height to Cen. Pinion Shaft, In. | Shipping Weight, Lbs. | Speed of Pinion Shaft | Horse Power Required | Price Without Motor | Net Extra for Balance Weights |
|---------------------------|--|---------------|-------------------------|--|-----------------------------|--------------------------|----------------------------------|---------------------------|-------------------------------------|
| 8 | 4 In. | 150 Ft. | 6 to 1 | 14x18 | 21 $\frac{1}{4}$ | 500 240 | $\frac{3}{4}$ to 1 $\frac{1}{2}$ | \$120.00 | \$ 4.00 |
| 12 | 5 In. | 150 Ft. | 6.8 to 1 | 21x38 | 31 $\frac{1}{2}$ | 900 240 | 2 to 3 | 214.00 | 6.00 |
| 16 | 6 In. | 150 Ft. | 7 to 1 | 28x42 | 38 $\frac{1}{2}$ | 1200 210 | 3 to 5 | 275.00 | 8.00 |
| 24 | 8 In. | 150 Ft. | 8 to 1 | 30x56 | 60 | 3000 200 | 7 $\frac{1}{2}$ to 12 | 555.00 | 12.00 |

Note gear ratio and speed of pinion shaft to get rated strokes.

Price, including motor with raw hide pinion and attaching, quoted on application, with necessary information. Give electrical conditions.

VERTICAL TRIPLEX PUMPS

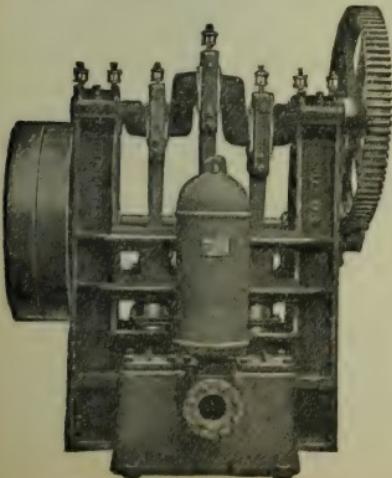
B2124

For All Purposes

For Liquids of All Kinds. Also for Air

With Tight and Loose Pulleys, also
with Direct Connected Electric Motors

Prices quoted on application. State duty
and requirements fully.



WORKING HEADS

STUFFING BOX HEADS



B2130

Brass, 3.00.

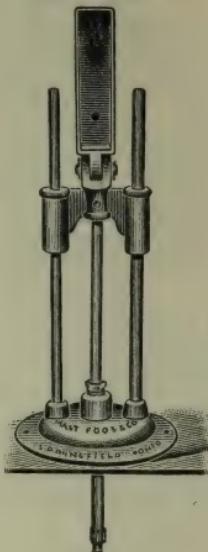


B2131

Iron, 6.00.

Stroke, 10 inch. Tapped 1, 1 $\frac{1}{4}$, 1 $\frac{1}{2}$, or 2 inch.

DEEP WELL



B2132

Iron, 10.00.

Fitted for 3, 3 $\frac{1}{2}$, or 4-inch pipe.
Piston rod is fitted with coupling for
 $\frac{3}{8}$ -inch pipe, but can be for wood or steel.
Place a Tee below base for discharge.

HEAVY PATTERN HEAD

With Discharge Tee above flange.
16-in. stroke. For 3, 4, or 8-in. Suction.
Each, 16.00. 25.00, 55.00.
Discharge 2 $\frac{1}{2}$, 3, and 6 in.

BULLDOZER POWER WORKING HEAD

For Deep Well Work

Price does not include cylinder.

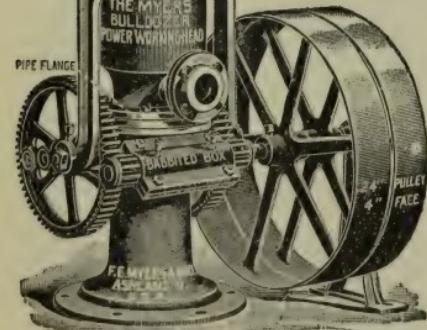
| | |
|------------------------------|--------|
| Regular Size, No. 1..... | 75.00 |
| Extra Large Size, No. 2..... | 150.00 |

Should run at not over 35 revolutions per minute, and less for deep wells.

Suction pipe is connected to flange under discharge opening. Valves and suction pipe can be withdrawn through base.

No. 1 is back geared 6 to 1, has 5, 7 $\frac{1}{2}$, and 10 inch stroke. Discharge, 2 $\frac{1}{2}$ inch or 3 inch. Suction any size, 2-inch to 4-inch pipe, or 4 $\frac{1}{4}$ -inch casing. Has 24 x 4 inch pulleys.

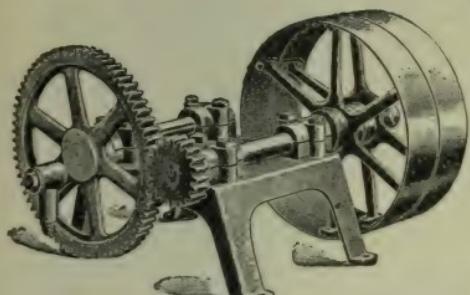
No. 2 is back geared 8 to 1, has 12, 16,



B2133

and 20-inch stroke. Discharge, 4 inch. Suction, 8 inch or less. Valves and suction pipe can be withdrawn through base. Has pulleys 30 x 6 inch.

The Bulldozer is also made Horizontal, being complete with cylinder in body of pump. Prices on application.

GEARED PUMPING JACK

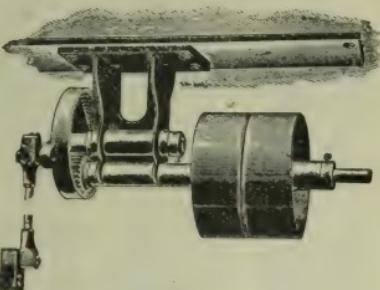
B2135

Price.....\$14.00

Geared four to one. Tight and Loose Pulleys are 3-inch face and 12-inch diameter. Adjustable Stroke, 5, 6½ or 8 inches. An extra link for Wood Rod is also furnished.

GEARED COUNTERSHAFT

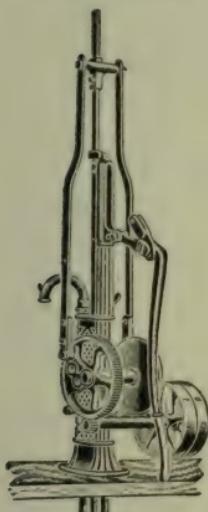
With 12-inch Tight and Loose Pulley



B2136

| | |
|---------------------------------------|---------|
| No. 1 Geared two and half to one. | \$20.00 |
| " 2 " five to one..... | 27.00 |
| " 1 has 4, 6, 7½ and 11 inch strokes. | |
| " 2 " 6, 8, 10 " 12 " | " " |

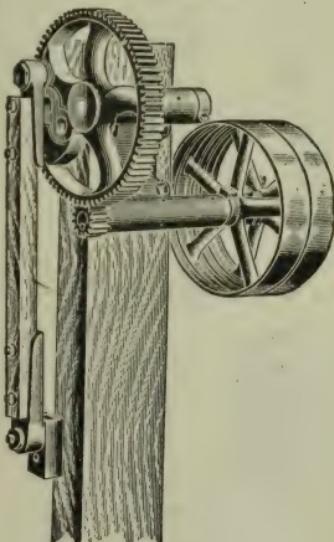
As a pump should run at 40 strokes per minute, the pulleys on No. 1 should run at 100 and the No. 2 at 200 revolutions per minute. Can be hung as shown, or attached to upright post, or set on platform.

**BUCKEYE JR.
PUMP JACK**


B2137

Jack only, without Pump Standard.....\$18.00

Attachable to any ordinary pump. Geared back six to one. Has 2 x 12 inch tight and loose pulleys.

**BUCKEYE
POST JACK**


B2138

Jack with six feet Wood Rod....\$16.00

Geared back six to one. A most satisfactory method of connecting belt power to a pump when located in a building.

DRIVE WELL PUMP**IRON CYLINDER PUMP****PLAIN WOOD PUMP****WOOD PUMPS**

From 6 x 6 Timber.

| Length | Unlined | Brass Cylinder | Porcelain Lined or Polished Iron |
|--------------|---------|----------------|----------------------------------|
| 6 ft....each | 5.50 | 7.50 | 7.00 |
| 7 " " " | 6.10 | 8.10 | 7.60 |
| 8 " " " | 6.70 | 8.70 | 8.20 |

From 7 x 7 Timber.

| Length | Unlined | Brass Cylinder | Porcelain Lined or Polished Iron |
|--------------|---------|----------------|----------------------------------|
| 6 ft....each | 7.00 | 9.25 | 8.75 |
| 7 " " " | 8.00 | 10.25 | 9.75 |
| 8 " " " | 9.00 | 11.25 | 10.75 |

From 5 x 5 Timber.

| Length | Unlined | Brass Cylinder | Porcelain Lined |
|--------------|---------|----------------|-----------------|
| 6 ft....each | 4.50 | 6.50 | 6.00 |
| 7 " " " | 4.75 | 6.75 | 6.25 |

DRIVE WELL PUMPS

From 6 x 6 Timber.

With 3 in. Polished Iron Cylinder fitted for
1 1/4 in. pipe.

| | |
|-------------------------------|------|
| 6 ft. long over Cylinder..... | 7.50 |
| 7 " " " " " | 8.10 |
| 8 " " " " " | 8.70 |

B2142

3 1/2 x 3 1/2 in., 12 ft. and under, 15c. ft.; over 12 ft., 16c. ft.
 4 x 4 " 12 " " 2c. " " 12 " 22c. "
 4 1/2 x 4 1/2 " 12 " " 28c. " " 12 " 30c. "

B2140**EXTENSION TUBING**, per foot: 5x5 in., 40c.; 6x6 in., 60c.**COUPLINGS, WITH BANDS**, each: 5x5 in., 40c.; 6x6 in., 50c.;
8x8 in., 60c.**CHAIN PUMP TUBING**, 3 1/2 x 3 1/2 in., quoted on application.**TUBING****DRIVE WELL CONNECTIONS — B2143**

Plugged and Valved, 1 1/4, 1 1/2 or 2 inch.....each, 1.00

| | | | |
|---------------------------------|------|---------------------------------|------|
| Buckets, complete, 4 inch..each | 1.00 | Spout Braces.....each | .15 |
| " 3 1/2 " " .. | .80 | Bands....." " | .10 |
| " 3 " " .. | .65 | Brackets, Iron(open)" " | .40 |
| Caps and Acorns..... | .25 | " (closed)" " | .50 |
| Frost Vents..... | .15 | Check Valves.....per doz. | 1.50 |
| Handles.....each | .30 | Bucket Woods, assorted... " " | 3.00 |
| Handle Links....." | .25 | Bucket Leathers " ... " " | 3.50 |
| Iron Spouts | .30 | Wood Rod.....per foot | .03 |
| Wood Spouts | .15 | Wood Rod Coupling Straps ..each | .30 |

**I X L GALVANIZED STEEL TUBING**

For Use with Steel Curbs

RESER-
VOIR
TUBING

FUNNEL PLAIN TUBING

RESER-
VOIR
WITH
FUNNEL

| | |
|-------------------------------------|------|
| "I X L" Size Curb and Fixtures..... | 4.00 |
| "Gem" " " " " | 3.00 |

Iron Platforms: IXL, 6.00; Gem, 1.25.

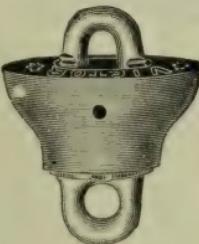


B2152

Per Pound, \$0.10.

GALVANIZED**CHAIN**

For Pumps

VICTOR
RUBBER
BUCKET

B2153

Per Dozen,
1.25.RUBBER
BUCKET
Especially
for
Steel Pumps

B2154

Per Dozen, 1.25.

Reservoir Tubing is made in lengths of 5, 6, 7, 8, 9, and 10 feet.

Funnel Tubing is made in lengths of 6, 8, and 10 feet.

Plain Tubing is used in cisterns or wells where the depth is greater than 19 feet between the Reservoir and Funnel to make required length. Plain Tubing is made in 8 and 10 feet lengths.

Reservoir Tubing with Funnel is made in lengths of 9 and 10 feet, purposely for cisterns of 8 and 9 feet depth.

Directions to get proper length of Tubing for Cistern: Add to whatever the depth of cistern measures from platform to bottom 1 more foot of tubing; this will give proper allowance for tubing in curb, and the right distance it should hang from bottom.

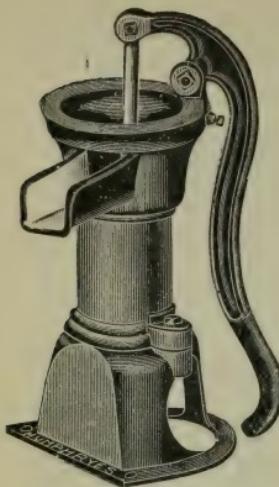
Price either style, 10c per foot, with additional charge for the couplings of 20c per set.

B2147

B2148

B2149

B2150



PITCHER SPOUT PUMP

| No. | Diameter Cylinder Inches | Suction Fitted For Pipe, In. | B2160 Iron | B2161 Brass Tube Cylinder | B2162 Porcelain Lined Cylinder |
|-----|--------------------------------|---------------------------------------|---------------|------------------------------------|---|
| 1 | 2½ | 1 | 4.25 | 6.50 | 6.50 |
| 2 | 3 | 1¼ | 4.75 | 7.25 | 7.25 |
| 3 | 3½ | 1¼ | 5.25 | 8.00 | 8.00 |
| 4 | 4 | 1½ | 6.25 | 9.00 | 9.00 |
| 5 | 4½ | 2 | 9.50 | 12.50 | 12.50 |

The valve can be tripped by raising the handle.

AIR COMPRESSOR

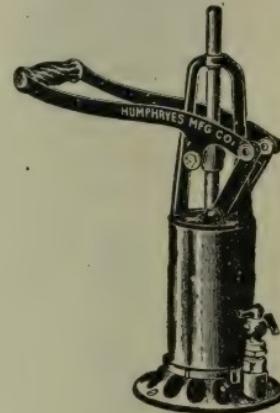
B2163½

3-inch Brass Cylinder.

4-inch Stroke.

¾-inch Discharge.

Each, \$10.00.



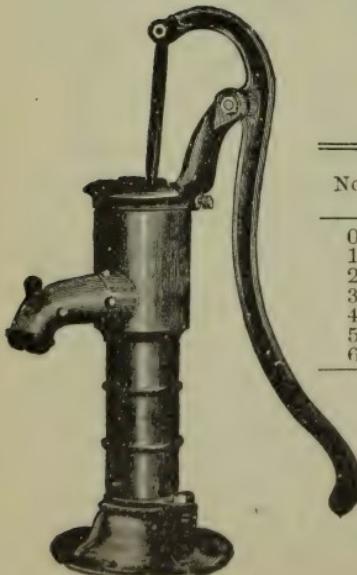
B2163½

B2163

Stroke, 6 Inches

| No. | Diameter Cylinder Inches | Suction For Pipe, In. | Iron Each | Brass Cylinder Each |
|-----|--------------------------------|-----------------------------|--------------|---------------------------|
| 0 | 2 | 1 | 3.50 | 5.50 |
| 1 | 2¼ | 1 | 4.00 | 6.00 |
| 2 | 2½ | 1¼ | 4.50 | 7.00 |
| 3 | 2¾ | 1¼ | 5.00 | 8.00 |
| 4 | 3 | 1¼ | 5.50 | 10.00 |
| 5 | 3¼ | 1½ | 6.50 | 13.00 |
| 6 | 3½ | 1½ or 2 | 8.00 | 18.00 |

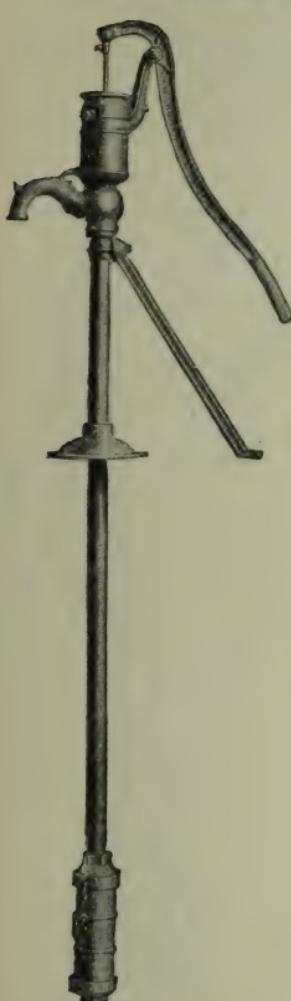
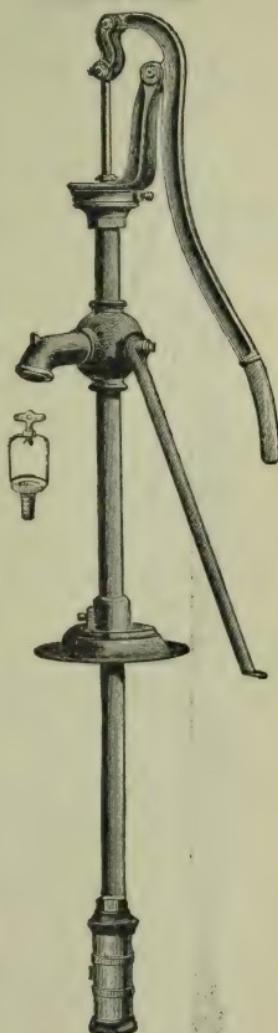
Can trip valve by raising the lever.



B2163

ADJUSTABLE BASE ANTI-FREEZING PUMPS

Gas Pipe Standard

**OPEN TOP LIFT PUMPS,
WITH SIPHON SPOUTS****B2164****B2165****FORCE PUMP****B2166**

Six-inch Stroke, fitted for 1½-inch Suction Pipe. Price with Iron Cylinders:

| No. | Diameter Cylinder | B2164 | No. | Diameter Cylinder | B2165 | No. | Diameter Cylinder | R2166 | |
|------------------------------------|----------------------|------------------------------------|-----|------------------------------------|-------|------------------------------------|----------------------|-------|--|
| 4 | 3 inches | 8.50 | 4 | 3 inches | 9.00 | 4 | 3 inches | 8.50 | |
| Standard is of 1½-inch Gas Pipe | | Standard is of 1½-inch Gas Pipe | | Standard is of 1½-inch Gas Pipe | | Standard is of 1½-inch Gas Pipe | | | |

B2164 and B2165 can be furnished from factory with Tight Top at special price.

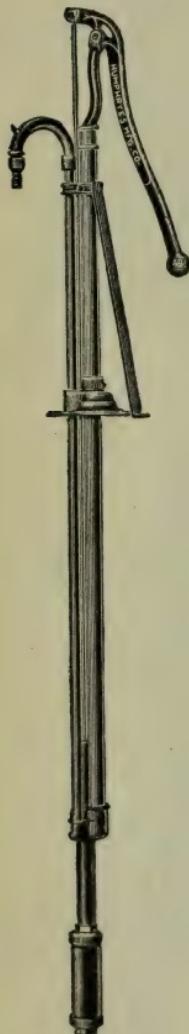
Pumps on this page can be furnished with Brass Tube or Brass-Lined Cylinders at special prices, also with 2½-inch or 2¾-inch cylinders if desired.

"CENTURY" DOUBLE-ACTING FORCE PUMPS

With Adjustable Base For Shallow and Deep Wells

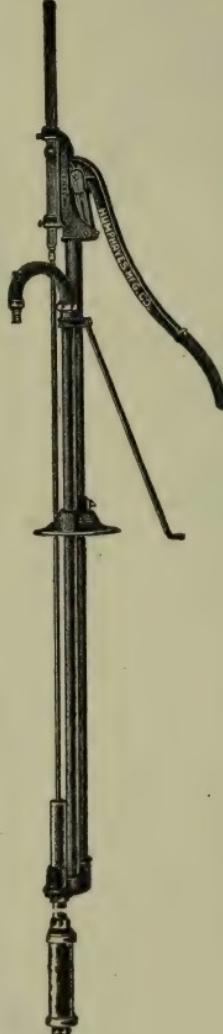
HAND PUMP WIND MILL PUMP THREE-WAY WIND MILL PUMPS
 WITH CYLINDERS NEW STYLE
 (Cylinder extra)

H117



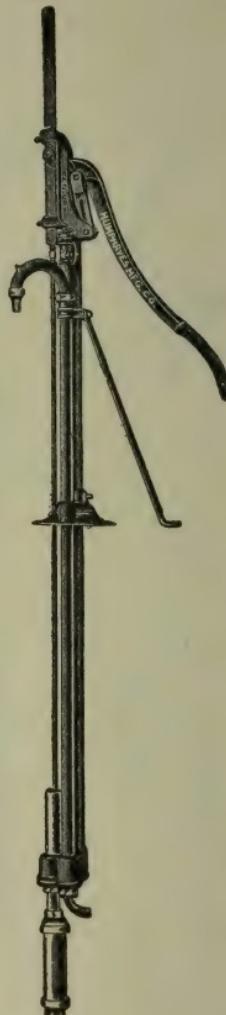
B2170

H119



B2171

H120



B2172

H123



B2173

Also made with
3-way Valve. Cy-
linder is detach-
able so it may be
used in Deep Well.

If Century Pumps are used for Deep
Wells the Bottom Cylinder should be
lowered to within 15 feet of the Water.
Lower Cylinders are detachable.

Tapped 2 inches
for Tubular Wells.
Also furnished
fitted 1 $\frac{1}{4}$ inch
with Lower Cyl-
inder for Shallow
or Deep Wells.

See Description and Prices next page.

CENTURY DOUBLE ACTING PUMPS

For Shallow or Deep Well—6-inch Stroke

B2170 (No. 117H) Hand Pump with 3-inch Brass Cylinder, \$15.00. If wanted with Three-Way Valve add to list \$3.00.

B2171 (No. 119H) Windmill Pump, 3-inch Brass Cylinder, \$16.00.

B2172 (No. 120H) is same as 119H, with Three-Way Valve \$19.00.

B2173. (No. 123H) New Century Windmill Standard only with Three-Way Valve (Lower Cylinder not included). Size 1, fitted for 1½-inch Pipe, 6-inch Stroke, \$13.00. Size 2, fitted for 2-inch Pipe, 10-inch Stroke, \$13.50.

Size 1 has 1½-inch Upper Cylinder, size 2 has 1¾-inch Upper Cylinder.

If furnished with 2½ or 3-inch Lower Cylinder (Brass), add to list 6.00.

No. 1 takes 12-inch Long Cylinder, No. 2 takes 14-inch Long Cylinder.

Adjustable Stroke Pump, 6, 8 and 10 inch, same price as 10-inch Stroke.

A Stuffing Box can be substituted for the Upper Cylinder at same price if desired.

These **B2173** New Century Pumps have the base cast in two pieces, extending very high on the Air Chamber. The Three-Way Valve is operated by a malleable cam attached to the Air Chamber and Discharge Pipe. The rod connecting to the distributing valve is on outside of Discharge Pipe, which avoids all possible chance of freezing. The entire pump fitted with 3-inch Flush Cap Cylinder can be easily placed inside 6-inch casing.

The Brass Union Ell on Three-Way can be turned to suit the direction of underground pipes. The working head is tapped regularly for 2-inch pipe, so that when used on tubular wells the valves can be withdrawn, but can be furnished with Universal Bushing, when so ordered, for connection to smaller size pipe and cylinders. The Windmill Rod, or flat rod, extends below base and is attached to Round Rod by means of malleable clip.

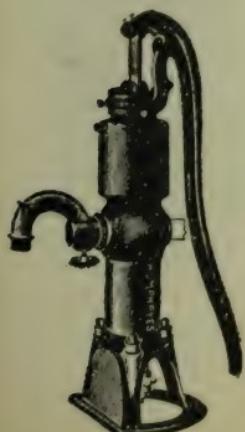
These Century and New Century Pumps have large Air Chamber, which insures a steady stream. They have adjustable base and brace, making them convenient to set.

SYPHON SPOUT, DOUBLE ACTING HOUSE FORCE PUMP

With Air Chamber and Submerged Upper Cylinder

B2175 as illustrated with Cock in Spout and tapped in back for upward discharge.

B2175½ is without Cock and rear tapping.
Stroke, 4 inches.

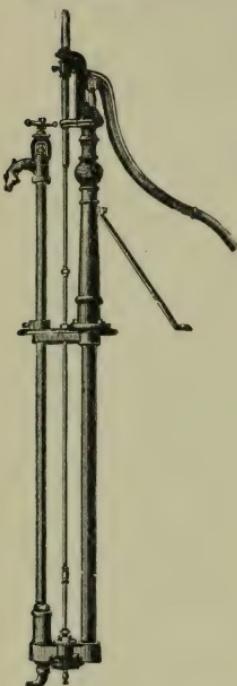


B2175

| | | Brass Lined Cylinder | Brass Cylinder |
|---------------|---|-------------------------|-------------------|
| B2175 | Cock Spout, Diam. Cyl. 2½ in., Suction fitted for 1-in. Pipe..... | 8.50 | 9.50 |
| | Diam. Cyl. 3 in., Suction fitted for 1¼-in. Pipe.. | 10.50 | 11.50 |
| B2175½ | Plain Spout, Diam. Cyl. 2½ in., Suction fitted for 1-in. Pipe.... | 6.50 | 7.50 |
| | Diam. Cyl. 3 in., Suction fitted for 1¼-in. Pipe..... | 8.50 | 9.50 |

WINDMILL THREE-WAY PUMP

ILLUSTRATES SINGLE ACTING STANDARD FOR DEEP WELLS



B2190

Three-Way Standard
without Cylinder

With 1½-in. Air Chamber.
Tubular valves can be withdrawn.

Double Acting Pump with
Brass Cylinders

| Stroke | Suction Fitted For | Price |
|----------|-----------------------|-------|
| 6 inches | 1¼ inch | 17.00 |
| 10 " | 2 " | 18.50 |

If Double Acting add for
Upper Cylinder, 50c. extra.

If Air Chamber is 2 in.,
add \$1.00.

Can be furnished with
Upper Cylinder, making
Pump Double Acting.

No. 1. Cylinder 2½
in. Brass,
Stroke 6 in.,
Suction fit-
ted for 1¼
in. Pipe

21.50

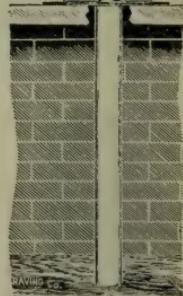
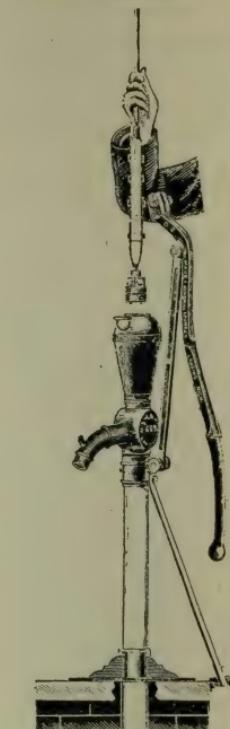
No. 2. Cylinder 3
in. Brass,
Stroke 6 in.,
Suction fit-
ted for 1½
in. Pipe

22.50

If Single Acting, without
Upper Cylinder, deduct 50c.

The tubular well valves are easily removed from **Mascot Pump** shown in cut, by taking out a plug at top of head.

MASCOT TUBULAR WELL PUMP



B2195

Each. \$4.50

The 2 inch Well Pipe forms
the standard, on to which
the head is screwed just
below the spout. The base
brace and a Windmill Slide.

SET LENGTH ANTI-FREEZING PUMPS**LIFT PUMPS**

Hand, Open Top Wind Mill

FORCE PUMPS

Hand Pump Wind Mill Pump



B2200



B2201



B2202



B2203

Cock Spout Extra.

Can furnish with Brass Cylinders at special price.

HAND LIFT PUMPS

With Iron Cylinder, 6-in. Stroke

| No. | Cylinder 10 Inches | Suction Fitted For Pipe. In. | B2200 Open Top | B2200½ Tight Top |
|-----|--------------------------|---------------------------------------|----------------------|------------------------|
| 1 | 2½ | 1¼ | 7.50 | 8.75 |
| 2 | 2¾ | 1¼ | 8.00 | 9.00 |
| 3 | 3 | 1¼ | 8.50 | 9.25 |

WINDMILL LIFT PUMPS

With Iron Cylinder, 6-in. Stroke

| No. | Cylinder 10 Inches | Suction Fitted For Pipe. In. | B2201 |
|-----|--------------------------|------------------------------------|-------|
| 1 | 2½ | 1¼ | 8.75 |
| 2 | 2½ | 1¼ | 9.00 |
| 3 | 2¾ | 1¼ | 9.25 |
| 4 | 3 | 1¼ | 9.50 |
| 5 | 3¼ | 1¼ | 9.75 |
| 6 | 3½ | 1¼ | 10.25 |

HAND FORCE PUMPS

With Iron Cylinder, 6-in. Stroke

| No. | Cylinder 10 Inches | Suction Fitted For Pipe. In. | B2202 |
|-----|--------------------------|------------------------------------|-------|
| 3 | 2½ | 1¼ | 13.00 |
| 4 | 3 | 1¼ | 13.00 |
| 5 | 3¼ | 1¼ | 13.50 |
| 6 | 3½ | 1¼ | 14.00 |

Cock Spout adds \$2.00 list.

WINDMILL FORCE PUMPS

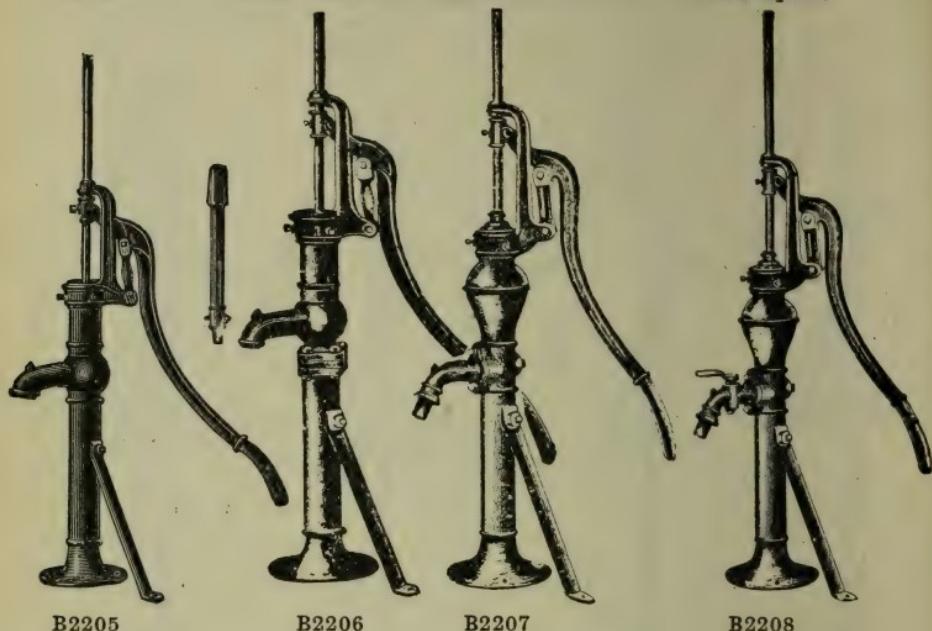
With Iron Cylinder, 6-in. Stroke

| No. | Cylinder 10 Inches | Suction Fitted For Pipe. In. | B2203 |
|-----|--------------------------|------------------------------------|-------|
| 3 | 2½ | 1¼ | 13.25 |
| 4 | 3 | 1¼ | 13.50 |
| 5 | 3¼ | 1¼ | 14.00 |
| 6 | 3½ | 1¼ | 14.50 |

For Cock Spout add to list 2.50.

WINDMILL PUMP STANDARDS

| LIFT STANDARDS | FORCE STANDARDS |
|----------------|---------------------------|
| Regular | Large Pattern Plain Spout |
| | Cock Spout |

**B2205. LIFT PUMP STANDARD**

| | | |
|--------------------|------|------|
| 6-inch Stroke..... | each | 7.00 |
| 10 " " | " | 9.00 |

Above Standards fitted for 1½, 1⅔, or 2-inch pipe.

***B2206. EXTRA HEAVY LIFT PUMP STANDARD**

| | | |
|---|------|-------|
| 10-inch Stroke, fitted for 2½-inch or smaller pipe..... | each | 11.50 |
|---|------|-------|

B2207. FORCE PUMP STANDARD WITH PLAIN SPOUT

| | | |
|--|------|-------|
| 6-inch Stroke, | each | 10.00 |
| 10 " " | " | 11.50 |
| *10 " " (Special) Tapped for 2½-inch pipe..... | " | 15.00 |

Standards can be furnished for 1¼, 1½, or 2-inch pipe.

B2208. FORCE PUMP STANDARD WITH COCK SPOUT

| | | |
|--|------|-------|
| 6-inch Stroke..... | each | 12.50 |
| 10 " " | " | 14.00 |
| *10 " " (Special) Tapped for 2½-inch pipe..... | " | 17.50 |

B2208 can be furnished for 1¼, 1½, or 2-inch pipe.

*These Standards for 2½-inch pipe generally have the stock cast in two sections, and bolted together just below spout, and flange tapped for well pipe is inserted at this joint. Top of Standard may be removed and valves withdrawn.

HAND PUMP STANDARDS

LIGHT PATTERN OPEN TOP

EXTRA HEAVY PATTERN

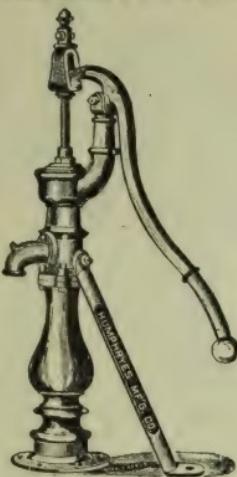


B2210

Fitted for 1½ in. pipe, 6 in. stroke, 4.25

Heavy Pattern

Fitted for 1¼ in. pipe, 8 in. stroke, 6.00



B2211

Lift for 1½ in. pipe, 6 in. stroke, 10.00

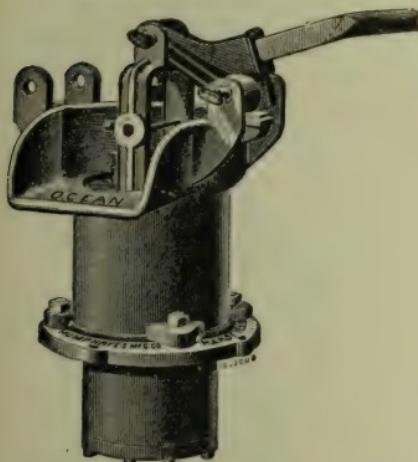
Can be fitted for 1¼ in. or 2 in. pipe.

Pipe Screws into flange under spout.

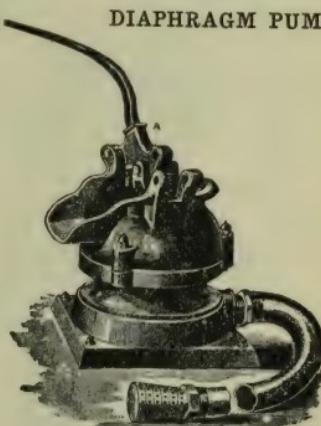
Intended for wells up to 100 feet deep.

B2212 **Force Pump**, similar to B2211, with Hose Coupling and Air Chamber on Spout, 13.00.

Cock Spout, add 2.00.

BILGE PUMP

B2215

TRENCH PUMPS**DIAPHRAGM PUMP**

B2216

| No. | Diam. Cylinder | Suction Fitted for | Stroke | Gallons per Stroke | Price |
|-----|-------------------|--------------------------|--------|--------------------------|-------|
| 1 | 6 In. | 2½ In. Pipe | 4 In. | ½ | 23.00 |
| 2 | 8½ " | 3 " | 6 " | 1½ | 30.00 |

If with Side Suction, with Flange and Bolts, add 1.00.

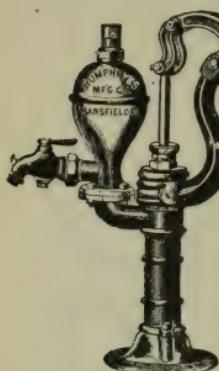
| | No. | Suction | Capacity per Stroke | Price |
|--------------|-----|---------|---------------------------|-------|
| Side Suction | 2 | 3 In. | 1½ Gallons | 45.00 |

Price does not include Hose and Strainer.

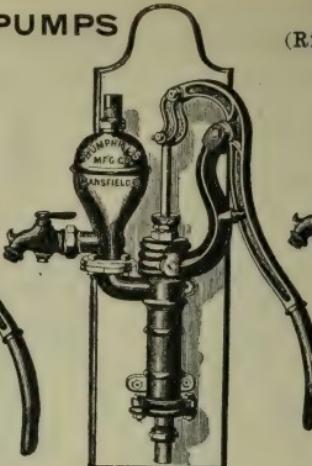
If with Bottom Suction, deduct 5.00.

HAND FORCE PUMPS

With Adjustable
(Right or Left) Handle



B2230



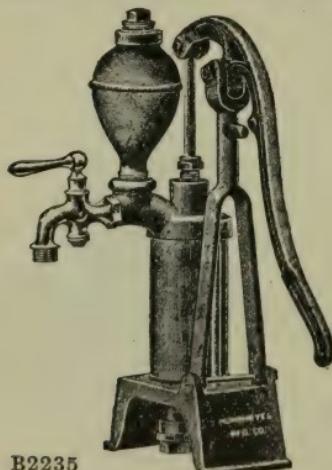
B2231



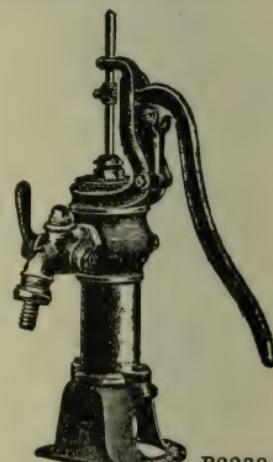
B2232

| | No. | Diam. Cylinder Inches | Suction and Discharge Fitted For | Stroke In. | Iron | Brass Cylinder |
|-----------------------|-----|-----------------------------|--|---------------|-------|-------------------|
| B2230 and B2231 | 1 | 2 | 1 1/4 inch Pipe | 6 | 11.00 | 16.50 |
| | 2 | 2 1/2 | 1 1/4 " " | 6 | 12.50 | 18.00 |
| | 3 | 3 | 1 1/4 " " | 6 | 14.50 | 19.50 |
| B2232 | 4 | 3 1/2 | 1 1/2 " " | 8 | 21.50 | 29.50 |
| | 5 | 4 | 1 1/2 or 2 " | 8 | 22.50 | 35.50 |
| B2232 | 2 | 2 1/2 | 1 1/4 inch Pipe | 6 | 16.00 | 20.00 |
| | 3 | 3 | 1 1/4 " " | 6 | 18.00 | 24.00 |

These pumps made with plain spout, also without air chamber, etc.

BRASS CYLINDER FORCE PUMP

B2235

IMPROVED HAND FORCE PUMP

B2238

Cylinder 3 inch, Stroke 6 inch. Fitted
for 1 1/4-inch pipe.

Price, as illustrated. 11.50.

Price, with Plain Spout (no cock). 10.00.

Deduct if without air chamber, 1.50.

Can be furnished on plank like B2231.

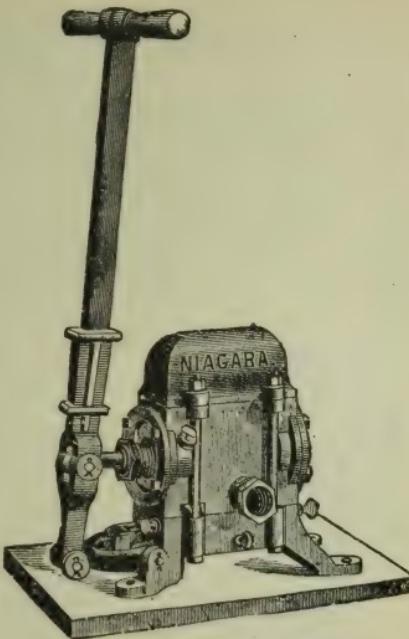
| No. | Size Cyl'd'r Inch's | Suct'on Pipe Inch's | Dischg. Hose Inch's | Stroke In. | Price |
|-----|---------------------------|---------------------------|---------------------------|---------------|-------|
| 1 | 2 1/2 | 1 | 3/4 | 4 | 8.50 |
| 2 | 3 | 1 1/4 | 3/4 | 4 | 9.50 |

If without cock in spout deduct \$2.50.

**HORIZONTAL
DOUBLE ACTING
FORCE PUMPS**



*B2240



†B2241

| No. | Diam. Cyl'd'r In. | Double Suction Fitted For Pipe Inches | Double Dischg. Fitted For Pipe Inches | Iron | Brass Lin'd | No. | Diam. Cyl'd'r In. | Suction Inches | Dischg. Inches | Brass Lined |
|-----|-------------------------|---|---|-------|----------------|-----|-------------------------|-------------------|-------------------|----------------|
| 2 | 2½ | 1¼ | 1 | 16.00 | 17.50 | 2 | 2½ | 1½ | 1 | 27.00 |
| 4 | 3 | 1¼ | 1 | 18.00 | 20.00 | 4 | 3 | 1½ | 1 | 28.00 |
| 6 | 3½ | 1½ | 1¼ | 20.00 | 22.50 | 8 | 4 | 1½ | 1½ | 30.00 |
| 8 | 4 | 1½ | 1¾ | 24.00 | 27.00 | 12 | 5 | 2 | 1½ | 40.00 |

* 5-inch Stroke. † Can furnish with high air chamber at same price.
4½-inch stroke, except No. 12 is 5-inch stroke.

B2240 Pump is always fitted for iron pipe, but can be fitted for lead pipe or hose if especially ordered.

B2241 Pump has bronze piston rod, valves and valve seats. Always fitted suction and discharge for iron pipe unless otherwise ordered.

B2242 Pump is always fitted for iron pipe unless otherwise ordered, but can be fitted for hose or lead pipe if ordered.

B2242

| No. | Size Cyl'd'r Inches | Suction Fitted For Pipe. In. | Discharge Fitted For Pipe, In. | Iron | Brass Lined Cylinder |
|-----|---------------------------|------------------------------------|--------------------------------------|-------|----------------------------|
| 1 | 2½ | 1¼ | 1 | 16.00 | 18.00 |
| 2 | 3 | 1½ | 1¼ | 18.00 | 21.00 |

Stroke, 4 inches.

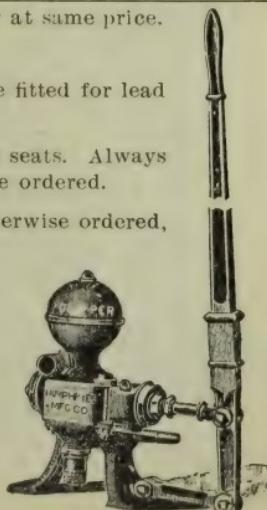
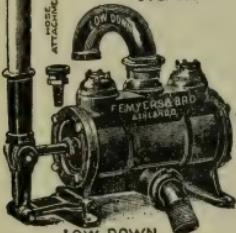




FIG. 513.



B2250

HOSE ATTACHMENT

TANK PUMPS**Myer's Horizontal, Low Down, Double Acting**

Price with Suction Strainer and Hose Nipple..... 15.00
If with Brass Lined Cylinder add \$5.00.

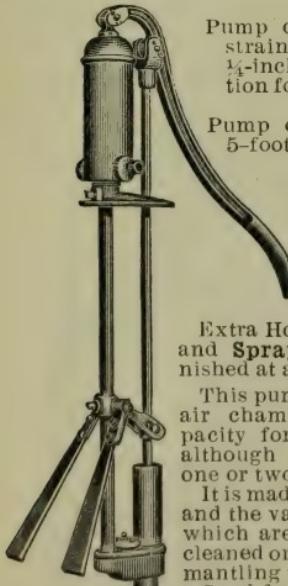
Myer's Patent Suction Strainer only, each \$1.50.

For Hose see other pages, this catalogue.

Five-inch Cylinder, five-inch Stroke, Suction and Discharge
two-inch.

Order repairs by number cast on part.

Useful for filling thresher tanks, washing out boilers,
for use in shallow stock wells, draining cellars and barn-
yards, irrigation purposes, washing wagons, windows, etc.,
spraying fruit trees, putting out fires, and general use
about the farm. As a protection against fire is without a
rival.

BARREL SPRAY PUMP

B2251

Pump only, with agitator,
strainer and one foot of
 $\frac{1}{4}$ -inch Pipe, with connec-
tion for $\frac{1}{2}$ -inch hose, 11.00

Pump complete, with one
5-foot line $\frac{1}{2}$ -inch, 3-ply
Hose, Vermorel
Spray Nozzle,
Strainer and Agi-
tator 13.00

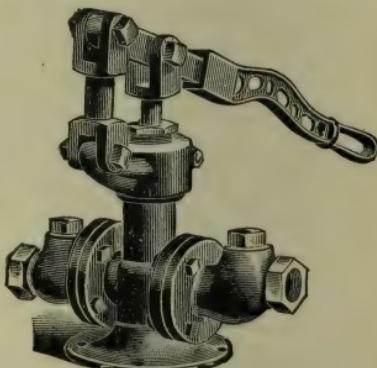
Pump complete,
with two lines of
Hose and Nozzles.
15.00

Extra Hose, Pipe Extensions
and **Spraying Nozzles**, fur-
nished at additional cost.

This pump has an extra large
air chamber, with ample ca-
pacity for four lines of hose,
although fitted regularly for
one or two lines only.

It is made with brass cylinder,
and the valves and valve seats,
which are also of brass, can be
cleaned or removed without dis-
mantling the pump.

Send for special circular giv-
ing full information regarding
spraying mixtures.

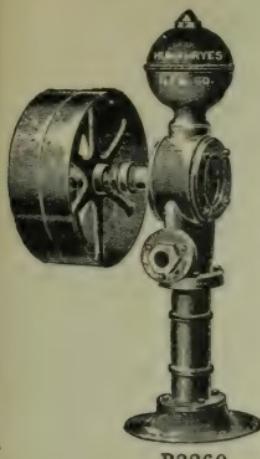
HYDRAULIC TEST PUMP

B2252

| No. | Diam. Ram | Working Pressure | Price Each |
|-----|-------------------|---------------------|---------------|
| 0 | $\frac{3}{4}$ in. | 700 lbs. | 18.50 |
| 1 | 1 " | 550 " | 19.00 |
| 2 | $1\frac{1}{4}$ " | 400 " | 19.50 |
| 3 | $1\frac{1}{2}$ " | 200 " | 20.00 |

With strong wood barrow and
cast tank underneath, add to list
\$10.00.

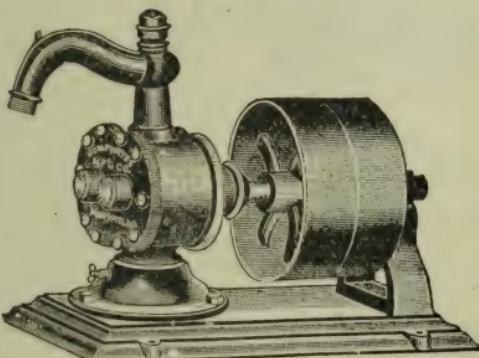
Pipe connection of pump 1 inch.
Stroke 5 inch.
Should set very close to water.



B2260

**ROTARY
FORCE PUMP**

On Base with Tight and Loose Pulleys



B2262

| No. | Suction Fitted for | Discharge Fitted for | Gallons Per Minute at 100 Rev. | Iron | Bronze Case and Cams |
|-----|-----------------------|-------------------------|--------------------------------------|-------|----------------------------|
| 1 | 1½ Inch Pipe | 1 Inch Pipe | 13 | 27.00 | 49.00 |
| 2 | 1½ " " | 1 " " | 14 | 32.00 | 56.00 |
| 3 | 1½ " " | 1½ " " | 17 | 38.00 | 63.00 |
| 4 | 1½ " " | 1½ " " | 27 | 48.00 | 78.00 |
| 5 | 2 " " | 2 " " | 33 | 54.00 | 90.00 |
| 6 | 3 " " | 3 " " | 55 | 80.00 | 135.00 |

Rotary Pumps are useful for pumping hot or cold water and other liquids, and are especially valuable as fire pumps. Will draw cold water by suction vertically about same distance as a piston pump. However a foot valve should be used.

If for hot liquids, they should be fitted with metallic valves.



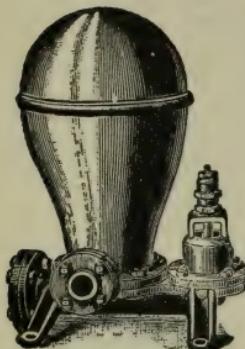
ROTARY HAND PUMP

With Fly Wheel

B2263

| No. | Suction Fitted for | Discharge Fitted for | Iron | Bronze Case & Cams |
|-----|---------------------------|-------------------------|-------|-----------------------|
| 1 | 1 $\frac{1}{4}$ Inch Pipe | 1 Inch Pipe | 20.00 | 42.00 |
| 2 | 1 $\frac{1}{4}$ " " | 1 " " | 23.00 | 47.00 |
| 3 | 1 $\frac{1}{2}$ " " | 1 $\frac{1}{4}$ " " | 27.00 | 52.00 |

IMPROVED HYDRAULIC RAMS



B2270

| No. | Quantity of Water Furnished per Minute by the Fountain to Which Ram is Adapted | Caliber of Pipes | | Price |
|-----|--|-------------------|-------------------|--------|
| | | Drive | Discharge | |
| 2 | 2 Quarts to 2 Gallons | $\frac{3}{4}$ In. | $\frac{1}{2}$ In. | 9.00 |
| 3 | $1\frac{1}{2}$ Gallons to 4 " | 1 " | $\frac{1}{2}$ " | 11.00 |
| 4 | 3 " to 7 " | $1\frac{1}{4}$ " | $\frac{3}{4}$ " | 14.00 |
| 5 | 6 " to 14 " | 2 " | 1 " | 22.00 |
| 6 | 11 " to 25 " | $2\frac{1}{2}$ " | $1\frac{1}{4}$ " | 40.00 |
| 7 | 20 " to 40 " | 3 " | $1\frac{1}{2}$ " | 75.00 |
| 8 | 25 " to 75 " | 6 " | 2 " | 125.00 |

Drive pipe must be not less than 25 feet to 50 feet long. This may be accomplished by bending the pipe into a coil 5 or 6 feet diameter or by using elbows. (45 degree ell preferred.)

The size of the pipes should vary in proportion to the distance the water is to be conveyed, as the greater the distance the larger the pipe in proportion to the size of the machine. This applies to the discharge pipe only.

By means of an adjuster, applied to each of our rams, the quantity of water drawn from the fountain may be varied at pleasure, thus readily adapting the machine to a *variable supply*.

Ram and pipes must be secured against effects of frost. The ram will elevate or force water almost any distance, depending however on the amount of fall at disposal.

It is practicable where the spring or brook is only 18 inches higher than the ram; yet, as the height increases, the more powerfully the ram operates, and its ability to force water to a greater elevation and distance is correspondingly increased. The relative height of the spring or source of supply above the ram, and the elevation to which it is required to raise, determine the relative proportion between the water raised and wasted, the quantity raised varying according to the height it is conveyed with a given fall. Also the distance the water has to be conducted, and consequent length of pipes, have some influence on the quantity delivered at the point of discharge, as the more extended the pipes through which the water has to be forced by the ram, the more friction there is to be overcome by the machine. Nevertheless, rams are frequently and successfully employed for driving water a distance of 100 to 200 rods, to an altitude of 100 to 200 feet above the ram. A fall of ten feet from the brook or spring to the ram is abundantly sufficient to raise water to any point less than 150 feet above the location of the machine, while the same amount of fall would also raise water to a point considerably higher, though the supply of water will be proportionately diminished as the height and distance increase. When the requisite quantity of water is forthcoming from the ram, operating under a certain fall, it is not judicious to give it more, for by so doing the strain on the machine is increased.

For ordinary purposes, it is sufficient to say that, in conveying water, say 50 or 60 rods, it may be safely calculated that one-seventh of the water can be raised and discharged at an elevation five times as high as the fall, or one-fourteenth part can be raised and discharged, say ten times as high as the fall applied, and so in like proportion as the fall or height is varied.

Thus, with a fall of five feet, of every seven gallons drawn from the fountain, one may be raised 25 feet, or half a gallon 50 feet; or with 10 feet fall, one gallon of every fourteen may be raised to the height of 100 feet, and so in proportion as the fall or height is varied. Turns in either drive or discharge pipe should be avoided if possible. When it is impossible to set the ram without having elbows in the pipe, make the elbows as large as may be, so as to make as little obstruction to the free and easy flow of the water as is practicable.

INFORMATION CONCERNING PUMPS

For the benefit of those interested, we offer below a few suggestions and Rules, applicable to Pumps, concerning Capacity, Speed, and Power required in operating, etc.

Theoretically, water can be raised vertically by suction about 33 feet; but since it is impossible to obtain a perfect vacuum, 20 to 25 feet is about as great a vertical distance as we would recommend a Pump (the Cylinder or Working Barrel) to be placed above the water, to insure its successful operation.

The necessary parts of a Pump are: the Cylinder, the Plunger (and its valve), the Check Valve (lower valve of Cylinder), the Suction Pipe, and the Piston or Connecting Rod. In order that the Pump works properly, all these parts should be in perfect condition; the Cylinder should be true, the plunger should fit the Cylinder accurately, and both the Plunger Valve and Check Valve (lower valve of Cylinder) should seat square and tight. Every part of the Cylinder should be air-tight, particularly all parts below the Plunger.

CAPACITY.—To compute the capacity of a Pump, apply the following rule: Square the diameter (in inches) of the Cylinder, multiply this by .7854, and the result (which is the area of the circle of Cylinder) by the length of stroke in inches. This gives the capacity in cubic inches per stroke (or revolution). Multiply this by the number of strokes per minute, and divide the product by 231 (the number of cubic inches in a gallon of water), and the result will be the capacity or amount of water the Pump will discharge per minute.

POWER.—To compute the Power required to raise a given amount of water per minute, to a certain height, apply the following rule: Multiply the number of gallons the Pump discharges per minute by 8.355 (the weight in pounds of one gallon of water), and the product by the total number of feet the water is to be elevated above the supply. The result is the Power required, in foot-pounds; divide this by 33.000 (the number of foot-pounds of one horse-power), and you have the horse-power necessary to do the work. About twenty per cent. must be added to this to compensate for friction, slip of valves, etc. The power of five men is equivalent to about one horse-power. Steam Engines, with the usual rated horse-power, will do more than that number of horses.

SPEED.—To compute the number of strokes per minute necessary to discharge a given quantity of water (the diameter of Cylinder, and length of stroke being known), apply the following.

Rule:—Divide the amount of water to be discharged (in gallons) per minute by the capacity (in gallons) per stroke, and you have the number of strokes per minute necessary to do the work. It may be well to note that the piston of a Power Pump should travel at a speed not greater than 100 ft. per minute.

The areas of circles are to each other as the squares of their respective diameters. In other words, doubling the Diameter of a Pipe or Cylinder increases its capacity (area of circle) four times.

Every foot of height in a column of water represents .434 pounds pressure to the square inch; in common practice, however, it is estimated that every foot in height represents one-half pound pressure to the square inch.

A cubic inch of water weighs .03617 lbs.

A cubic foot of water weighs 62.46 lbs.

A gallon of water weighs 8.355 lbs.

A gallon of water contains 231 cubic in.

A cubic foot of water contains 1,728 cubic in.

A cubic foot of water contains 7.4805 gals.

**TABLE SHOWING AMOUNT OF WATER
DISCHARGED PER STROKE
BY A SINGLE-ACTING PUMP**

The Diameter of Cylinder and Length of Stroke Being Known.

There is also appended a Table of Diameters and Areas of Circles, the Diameters of Circles and Cylinders Being Identical.

| Diameter of Pump Cylinder in Inches | LENGTH OF STROKE IN INCHES, WITH CAPACITY PER STROKE IN GALLONS | | | | | | | | | | | DIAMETERS AND AREAS OF CIRCLES | |
|-------------------------------------|---|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|--|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 10 | 12 | Inches | Diameter of Circle (Pump Cylinder) in Inches | Area of Circle (Pump Cylinder) in Square Inches |
| 1 | .0034 | .0068 | .0102 | .0136 | .0170 | .0204 | .0238 | .0272 | .0340 | .0408 | Gallons | 1 | .7854 |
| 1 $\frac{1}{4}$ | .0053 | .0106 | .0159 | .0212 | .0266 | .0319 | .0372 | .0425 | .0531 | .0637 | " | 1 $\frac{1}{4}$ | 1.2271 |
| 1 $\frac{1}{2}$ | .0076 | .0153 | .0229 | .0306 | .0382 | .0459 | .0535 | .0612 | .0765 | .0918 | " | 1 $\frac{1}{2}$ | 1.7671 |
| 1 $\frac{3}{4}$ | .0104 | .0208 | .0312 | .0416 | .0521 | .0625 | .0729 | .0833 | .1041 | .1249 | " | 1 $\frac{3}{4}$ | 2.4043 |
| 2 | .0136 | .0272 | .0408 | .0544 | .0680 | .0816 | .0952 | .1088 | .1360 | .1632 | " | 2 | 3 1416 |
| 2 $\frac{1}{4}$ | .0172 | .0344 | .0516 | .0688 | .0860 | .1053 | .1205 | .1377 | .1721 | .2071 | " | 2 $\frac{1}{4}$ | 3.9760 |
| 2 $\frac{1}{2}$ | .0212 | .0425 | .0637 | .0850 | .1062 | .1275 | .1487 | .1700 | .2125 | .2550 | " | 2 $\frac{1}{2}$ | 4.9087 |
| 2 $\frac{3}{4}$ | .0257 | .0514 | .0771 | .1028 | .1285 | .1543 | .1800 | .2057 | .2571 | .3085 | " | 2 $\frac{3}{4}$ | 5.9395 |
| 3 | .0506 | .0612 | .0918 | .1224 | .1530 | .1836 | .2142 | .2448 | .3060 | .3672 | " | 3 | 7.0686 |
| 3 $\frac{1}{4}$ | .0359 | .0719 | .1078 | .1438 | .1795 | .2156 | .2515 | .2875 | .3594 | .4313 | " | 3 $\frac{1}{4}$ | 8.2957 |
| 3 $\frac{1}{2}$ | .0416 | .0835 | .1249 | .1666 | .2082 | .2499 | .2915 | .3382 | .4165 | .4998 | " | 3 $\frac{1}{2}$ | 9.6211 |
| 3 $\frac{3}{4}$ | .0479 | .0957 | .1435 | .1914 | .2393 | .2871 | .3350 | .3828 | .4785 | .5743 | " | 3 $\frac{3}{4}$ | 11.044 |
| 4 | .0544 | .1088 | .1632 | .2176 | .2720 | .3264 | .3808 | .4352 | .5440 | .6528 | " | 4 | 12.566 |
| 4 $\frac{1}{2}$ | .0688 | .1377 | .2065 | .2754 | .3442 | .4131 | .4819 | .5508 | .6885 | .8262 | " | 4 $\frac{1}{2}$ | 15.904 |
| 5 | .0850 | .1700 | .2550 | .3400 | .4250 | .5100 | .5950 | .6800 | .8500 | 1.0200 | " | 5 | 19.635 |
| 5 $\frac{1}{2}$ | .1028 | .2057 | .3085 | .4114 | .5142 | .6171 | .7199 | .8228 | 1.0285 | 1.2342 | " | 5 $\frac{1}{2}$ | 23.758 |
| 6 | .1224 | .2448 | .3672 | .4896 | .6120 | .7344 | .8568 | .9792 | 1.2240 | 1.4688 | " | 6 | 28.274 |
| 7 | .1666 | .3332 | .4998 | .6664 | .8330 | .9996 | 1.1662 | 1.3328 | 1.6660 | 1.9992 | " | 7 | 38.484 |
| 8 | .2176 | .4352 | .6525 | .8704 | 1.0880 | 1.5056 | 1.5232 | 1.7408 | 2.1760 | 2.6112 | " | 8 | 50.265 |
| 9 | .2754 | .5508 | .8262 | 1.1016 | 1.3770 | 1.6524 | 1.9278 | 2.2032 | 2.7540 | 3.3048 | " | 9 | 63.617 |
| 10 | .3400 | .6800 | 1.0200 | 1.3600 | 1.7000 | 2.0400 | 2.3800 | 2.7200 | 3.4000 | 4.0800 | " | 10 | 78.540 |
| 12 | .4896 | .9792 | 1.4688 | 1.9584 | 2.4480 | 2.9376 | 3.4272 | 3.9168 | 4.8960 | 5.8752 | " | 12 | 113.098 |
| 15 | .7650 | 1.5300 | 2.2950 | 3.0600 | 3.8250 | 4.5960 | 5.3550 | 6.1200 | 7.8500 | 9.1800 | " | 15 | 176.715 |
| 18 | 1.1016 | 2.2032 | 3.3048 | 4.4064 | 5.5080 | 6.6096 | 7.7112 | 8.8128 | 11.0160 | 13.2192 | " | 18 | 254.470 |
| 20 | 1.3600 | 2.7200 | 4.0800 | 5.4400 | 6.8000 | 8.1600 | 9.5200 | 10.8800 | 13.6000 | 16.3200 | " | 20 | 314.160 |
| 24 | 1.9584 | 3.9168 | 5.8752 | 7.8336 | 9.7920 | 11.7504 | 13.7088 | 15.6672 | 19.5840 | 23.5008 | " | 24 | 452.391 |

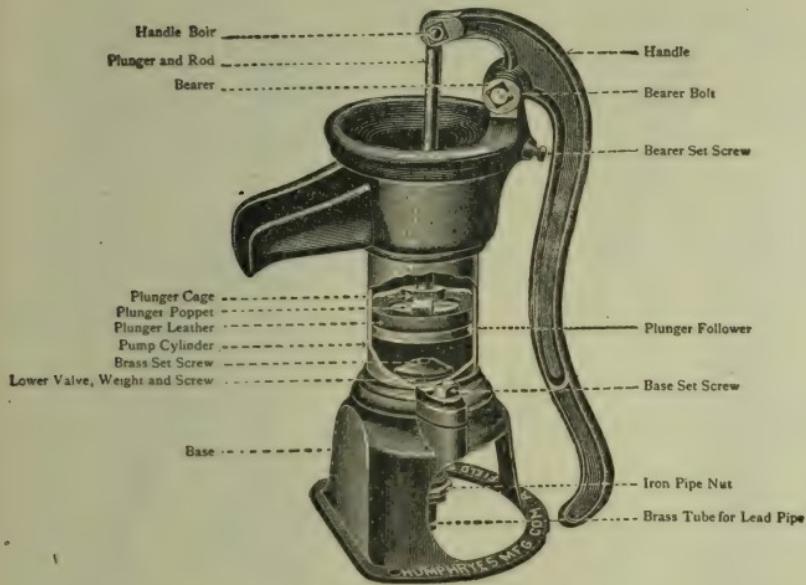
The capacities in gallons given in the foregoing table are for a Single-acting Pump, making one complete stroke (or revolution). The capacity of a Double-acting Pump is double that of a Single-acting Pump, with the same diameter of Cylinder and length of stroke.

To obtain the Capacity of a Pump with diameter of Cylinder given in the table, but with a longer stroke than 12 inches (the longest stroke given in table), add or multiply the capacity to represent the required length of stroke.

For instance: The capacity of a Cylinder with an 18-inch stroke would be the same as that (having the same diameter) of a 12-inch stroke cylinder, added to the capacity of a 6-inch stroke Cylinder; or the same result may be obtained by multiplying the capacity of a Cylinder with 6-inch stroke by 3. To obtain the amount of water discharged per minute, multiply the capacity per stroke by the number of strokes per minute.

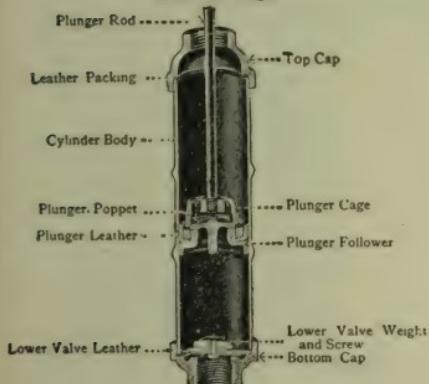
PUMP REPAIRS ILLUSTRATED

Closed Top



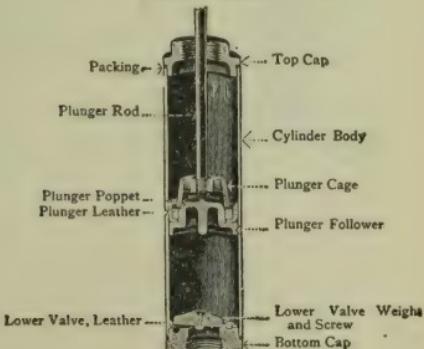
B2275

Iron or Brass Cylinder Outside Caps



B2276

Iron or Brass Cylinder Inside Caps



E2278

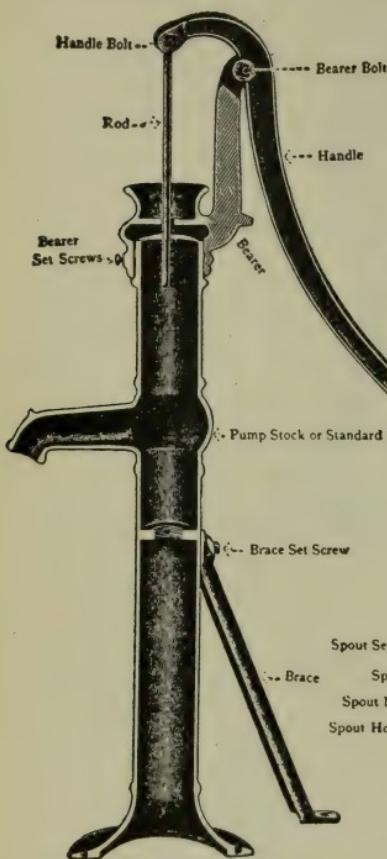
The names of Pump and Cylinder repairs given on this page apply to all similar parts of any of our pumps and cylinders.

In ordering pump repairs give all figures and letters on each repair wanted, and if possible state the name of the manufacturer as cast on the pump or cylinder. If you do not know Figure or Style of the pump refer to a similar pump illustrated in this catalogue, and if possible state size or number, if Number is not branded on the pump the size of the cylinder will help us to determine the size.

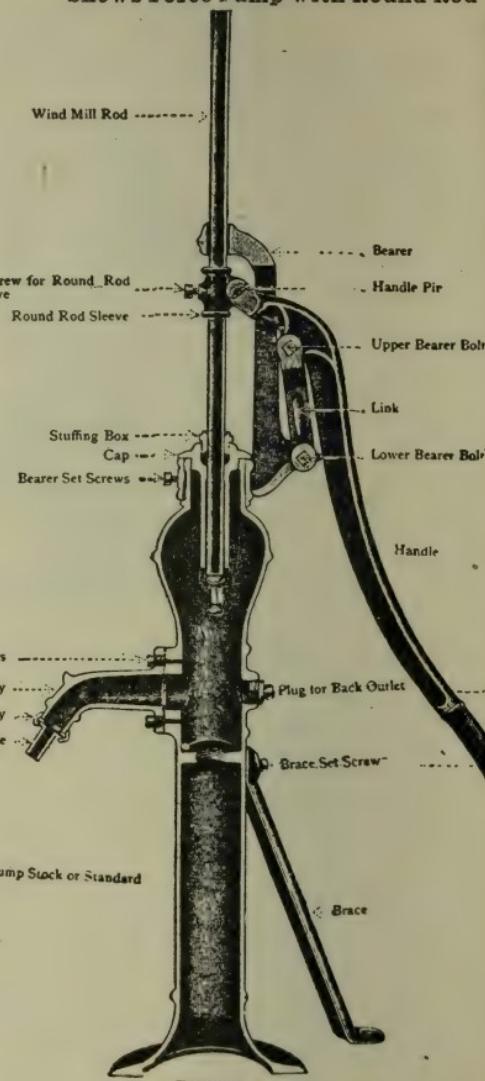
Repairs of one manufacturer will seldom fit pumps of another make.

PUMP REPAIRS

PARTS OF HAND LIFT PUMP
Shows Open Top Pump



PARTS OF WINDMILL PUMP
Shows Force Pump with Round Rod



B2279

When ordering Pump Repairs, always state the manufacturer's name as cast on the pump, and the figure or style of pump; state whether a force pump or only a lift pump, whether a windmill pump or a hand pump. If you don't know the figure of pump, refer to a similar pattern in this catalogue and state number or size. If number is not branded on the pump standard, the size of the cylinder should be stated.

The names of Pump Repairs given on this page apply to all similar parts of any of our pumps. In ordering repairs for Windmill Pumps, always state whether Bearer, Handle, Bearer Link and Rod are for six or ten inch stroke pump,

In ordering Rods, state whether the pump is fitted for round or flat rod.

In ordering pump repairs, give all the figures and letters on each repair wanted. The repairs of one manufacture will seldom fit a pump of another make.

PUMP CYLINDERS

IRON CYLINDERS
 Outside Caps Inside Caps Brass Lined **BRASS TUBE CYLINDERS**
 Inside Caps Outside Caps



B2300



B2301



B2302



B2303



B2304

| SIZE | Iron Cylinder with Iron Plunger | Brass Lined or Brass Tub. with Iron Caps, Iron Plunger | Brass Tube with Iron Caps, Brass Cage and Valve, Iron Follower | All Brass |
|---------|---------------------------------------|---|--|-----------|
| 2 x 10 | 3.75 | 6.75 | 7.50 | 10.75 |
| 2½ x " | 4.00 | 7.00 | 7.75 | 11.00 |
| 2½ x " | 4.35 | 7.25 | 8.00 | 12.25 |
| 2¾ x " | 4.70 | 7.50 | 8.50 | 12.75 |
| 3 x " | 5.00 | 7.75 | 9.00 | 13.50 |
| 3½ x " | 7.00 | 8.75 | 10.50 | 16.75 |
| 4 x " | 9.00 | 10.50 | 13.00 | 21.50 |
| 2 x 12 | 5.50 | 7.25 | 8.00 | 11.25 |
| 2½ x " | 5.75 | 7.50 | 8.25 | 11.50 |
| 2½ x " | 6.00 | 7.75 | 8.50 | 12.75 |
| 2¾ x " | 6.50 | 8.00 | 9.00 | 13.25 |
| 3 x " | 7.00 | 8.25 | 9.50 | 14.00 |
| 3½ x " | 9.00 | 9.50 | 11.25 | 17.50 |
| 4 x " | 11.50 | 11.75 | 14.25 | 22.50 |
| 2 x 14 | 6.00 | 7.75 | 8.50 | 13.00 |
| 2½ x " | 6.25 | 8.25 | 9.00 | 13.50 |
| 2½ x " | 6.50 | 8.50 | 9.25 | 14.75 |
| 2¾ x " | 7.00 | 8.75 | 9.75 | 15.50 |
| 3 x " | 7.50 | 9.00 | 10.25 | 16.25 |
| 3½ x " | 10.00 | 10.50 | 12.25 | 21.00 |
| 4 x " | 13.00 | 13.25 | 15.75 | 26.50 |
| 1¾ x 16 | ..... | ..... | ..... | 13.75 |
| 2 x " | 6.00 | 8.25 | 9.00 | 13.75 |
| 2½ x " | 6.50 | 9.00 | 9.75 | 14.50 |
| 2½ x " | 7.00 | 9.50 | 10.25 | 16.00 |
| 2¾ x " | 7.50 | 9.75 | 10.75 | 16.50 |
| 3 x " | 8.00 | 10.00 | 11.25 | 17.25 |
| 3½ x " | 11.25 | 11.75 | 13.50 | 22.25 |
| 4 x " | 14.50 | 15.00 | 17.50 | 28.00 |
| 1½ x 18 | ..... | ..... | ..... | 14.25 |
| 1¾ x " | ..... | ..... | ..... | 14.25 |
| 2 x " | 6.75 | ..... | 9.50 | 14.25 |
| 2¼ x " | 7.00 | ..... | 10.50 | 15.25 |
| 2½ x " | 7.50 | ..... | 11.25 | 17.00 |
| 3 x " | 8.50 | ..... | 12.25 | 18.25 |
| 3½ x " | 12.50 | ..... | 14.75 | 23.50 |
| 4 x " | 16.00 | ..... | 19.25 | 29.75 |

Stroke, with style plungers (see next page) usually furnished, is as follows:
10 in., Style A, 6 in. stroke; **12 in.**, Style B, 6 in. stroke; **14 in.**, Style B, 10 in. stroke;
16 in. and **18 in.**, Style C, 10 in. stroke. Inside caps shorten stroke slightly.
 Shortening plunger lengthens stroke.

PLUNGERS FOR PUMP CYLINDERS

ONE LEATHER PLUNGER TWO LEATHER PLUNGER LONG FOLLOWER LOWER PLUNGER SAND PLUNGER
 A Style A2 Style B Style



B2310



B2311



B2312



B2313

| Inside Diam. Cylinder.....in. | 1 $\frac{3}{4}$ | 2 | 2 $\frac{1}{4}$ | 2 $\frac{1}{2}$ | 2 $\frac{3}{4}$ | 3 | 3 $\frac{1}{4}$ | 3 $\frac{1}{2}$ | 4 | 4 $\frac{1}{2}$ | 5 | 6 |
|---------------------------------------|-----------------|------|-----------------|-----------------|-----------------|------|-----------------|-----------------|------|-----------------|-------|-------|
| "A" Style, Iron Plungers Only—No Rods | .. | .65 | .70 | .75 | .80 | .85 | .90 | 1.05 | 1.25 | 1.50 | .... | .... |
| "A" 2 " | .. | 1.50 | 1.75 | 2.00 | 2.25 | 2.50 | 2.75 | 3.25 | 4.00 | 5.00 | 7.00 | .... |
| "B" " | .. | 1.50 | 1.75 | 2.00 | 2.25 | 2.50 | 2.75 | 3.25 | 4.00 | 5.00 | 7.00 | .... |
| "C" " | 1.75 | 1.75 | 2.00 | 2.25 | 2.50 | 2.75 | 3.00 | 3.50 | 4.25 | 6.25 | 8.00 | 12.00 |
| Sand, | .. | .60 | .60 | .70 | .. | .75 | .. | 1.00 | 1.10 | .... | .... | .... |
| "A" " Brass Plungers | .. | 1.50 | 1.50 | 1.75 | 2.00 | 2.25 | 2.75 | 3.25 | 4.00 | .... | .... | .... |
| "A" 2 " | 2.25 | 2.25 | 2.50 | 2.75 | 3.00 | 3.50 | 4.00 | 4.75 | 5.50 | 8.00 | 12.00 | 18.00 |
| "B" " | 2.25 | 2.25 | 2.50 | 2.75 | 3.00 | 3.50 | 4.00 | 4.75 | 5.50 | 8.00 | 12.00 | 18.00 |
| "C" " | 2.50 | 2.50 | 2.75 | 3.00 | 3.50 | 4.00 | 4.50 | 5.00 | 7.00 | 10.00 | 14.00 | 20.00 |

A Style Plunger has Single Leather and Short Follower and is the plunger furnished in 10 inch Iron, Brass, or Brass Lined Cylinders—the cage and all metal parts being of iron, but can be furnished with Brass Cage and Valve at special price.

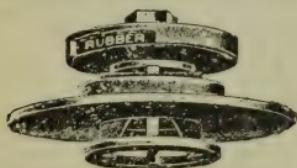
A2 Style Plunger, same as above, except has two Leathers. **A4** Style Plunger, same as above, except has four Leathers.

B Long Follower Style, same as above one leather plunger, except has a long (or extra long if desired) follower for 12 and 14 inch cylinders. Can be furnished with two or more Leathers if desired.

Style C Plunger is similar to Style B, except follower is extra long.

Note.—By using Long Follower or several leathers on a plunger, the stroke of the cylinder is necessarily shortened, as the plunger occupies more of the length of the cylinder.

B2313. Sand Plunger, one Leather only. Has leather valve instead of metal poppet. Sand Plunger is also made of brass at special price.



PATENT POPPET VALVE SEAT
Brass with Rubber Disc

B2315

Iron or Brass Cylinders with outside cap or with inside caps, can be furnished fitted with poppet valves instead of the ordinary leather valve, at special price.

PATENT DOUBLE ACTING PUMP CYLINDER



B2318

Prices and dimensions quoted on application.

The Cylinders are made from 2 $\frac{1}{4}$ inch to 6 $\frac{1}{2}$ inch outside diameter. The small ones with 6 and 10 inch stroke—the large ones can be furnished any length stroke desired. In making inquiries give full details of well and service required.

The Cylinder is adapted for use in all kinds of wells, and can be operated by hand, windmill, or power pumps. The outside case and attachments are furnished in either iron or brass, as ordered—all inside parts, including inner tube and plunger tube, are always all brass. We recommend that this cylinder be placed under the water in any kind of a well, although it can be used above the water, the same as any other cylinder.

TUBULAR WELL VALVES**POPPET PLUNGER**

B2320

BALL PLUNGER

B2321

FOUR LEATHER PLUNGER

B2322

MARCY SPOOL PLUNGER

Single Leather



B2323

MARCY CHECK With Dog**MARCY Spring Coupling SPOOL CHECK****BALE-TOP CHECK**

B2325

BALE-TOP BALL CHECK

B2326

SCREW TOP CHECK

B2327

Also made
with
Ball Valve
like B2326

B2328



B2329

CHAPMAN PATTERN VALVES

| Inches..... | 2 | 2½ | 3 | 4 | 5 | 6 |
|---|------|------|-------|-------|-------|-------|
| One two Leather Poppet or Ball Plunger and one Poppet or Ball Check Valve.....Per set | 2.40 | 6.00 | 8.00 | 18.00 | 35.00 | 42.00 |
| One four Leather Poppet or Ball Plunger, and one Poppet or Ball Check Valve.....Per set | 3.20 | 7.00 | 19.00 | 21.00 | 38.00 | 50.00 |

Two Leather Plunger or Check Separate is half the price of set..

MARCY VALVES

| Inches..... | 2 | 2½ | 3 |
|--|------|------|-------|
| Plunger B2323.....each | 1.30 | 3.50 | 5.50 |
| Check Valve B2328....." | 1.50 | 4.00 | 6.50 |
| " " with Dog Spring Coupling B2329....." | 2.00 | 5.50 | 10.00 |

EUREKA TUBULAR WELL CYLINDER

Complete with Valves and Spring Dog Coupling

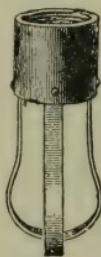


B2330

Size of Well
InchesInside Diameter
InchesStroke
InchesPrice of Cylinder
Complete

| | | | |
|----------------|----------------|----|--------|
| 2 | $1\frac{1}{8}$ | 12 | 6.40 |
| 2 | $1\frac{1}{8}$ | 16 | 7.60 |
| $2\frac{1}{2}$ | $2\frac{1}{4}$ | 12 | 11.00 |
| $2\frac{1}{2}$ | $2\frac{1}{4}$ | 16 | 12.50 |
| 3 | $2\frac{3}{4}$ | 12 | 15.00 |
| 3 | $2\frac{3}{4}$ | 16 | 17.00 |
| $3\frac{1}{2}$ | 3 | 12 | 30.00 |
| $3\frac{1}{2}$ | 3 | 16 | 33.00 |
| 4 | $3\frac{1}{2}$ | 16 | 36.00 |
| 4 | $3\frac{1}{2}$ | 24 | 42.00 |
| $4\frac{1}{2}$ | 4 | 16 | 50.00 |
| $4\frac{1}{2}$ | 4 | 24 | 58.00 |
| 5 | $4\frac{1}{2}$ | 24 | 60.00 |
| 5 | $4\frac{1}{2}$ | 36 | 80.00 |
| 6 | $5\frac{1}{2}$ | 24 | 112.00 |
| 6 | $5\frac{1}{2}$ | 36 | 136.00 |

Larger sizes quoted on application.

**DOG SPRING
COUPLINGS**

B2331

**RUBBER
PACKER RINGS**

B2333

For
Tubular Well Valves
and
Eureka Cylinders

Quoted on application.
Same style of valve.

Rubber Poppet Discs
for Tubular Well Valve
quoted on application.

SEATING TOOL

B2332

| Size..... | inches | 2 | $2\frac{1}{2}$ | 3 |
|-----------------------------|--------|------|----------------|---|
| B2332—Seating Tool.....each | .60 | .90 | 1.20 | |
| B2331—D. S. Coupling | .60 | 1.50 | 2.50 | |

Other sizes quoted on application.

TUBULAR WELL SEAL

B2335

VALVE BALLS

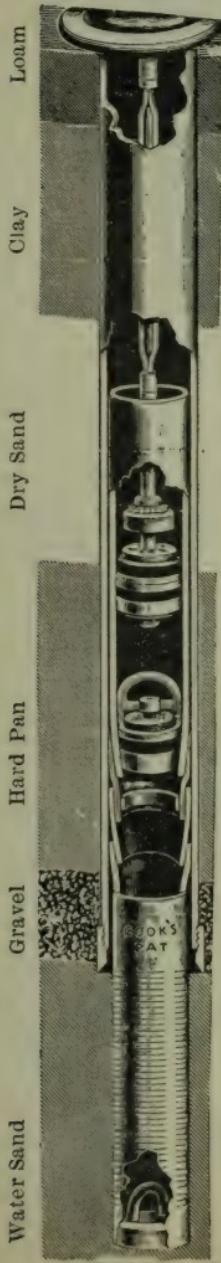
B2334

Rubber or Bronze.
Prices on application.

| Size Well Inches | Tappe l Inches | Price Each |
|------------------------|-------------------|---------------|
| 2 | $1\frac{1}{4}$ | 2.00 |
| $2\frac{1}{2}$ | $1\frac{1}{4}$ | 3.00 |
| 3 | 2 | 4.00 |
| $3\frac{1}{2}$ | $2\frac{1}{2}$ | 6.00 |
| 4 | $2\frac{1}{2}$ | 8.00 |

Larger sizes quoted on application.

**PLAIN BRASS
WORKING BARREL
AND
COOK WELL SCREEN
Imposition in
Tubular Well**



B2340

Gum Packer Working Barrel

**WORKING
BARREL**

B2340 shows a Plain Brass Working Barrel, Complete with Valves, set in Well on the top of a Cook's Patent Brass Strainer. It is not necessary to set the working barrel clear down to the strainer as illustrated, as a brass anchor can be furnished to hold the gum packer on bottom of working barrel at any point in the casing.

Pipe with open ends is first sunk to a proper depth or until a sufficient quantity of water-bearing sand or gravel has been penetrated. The strainer, with Lead Packer attached, is then lowered into the pipe. The pipe is then drawn back to allow the entire slotted portion of strainer to extend through lower end of pipe into the water-bearing sand or gravel (while pulling pipe back it is best to let poles remain in the well in order to know that strainer is not also drawn back). After pipe is drawn back as far as desired, lead packer is driven out, with tool made for the purpose, making a perfect joint between pipe and strainer. A Gum Packer with short brass tube attached is then shoved down the pipe to the point where working barrel is to be located. The working barrel is then lowered into well and firmly driven into the gum packer, making a tight joint between working barrel and pipe, at the same time holding working barrel in position.

The Cook Strainer can be furnished threaded inside or outside at one or both ends, to screw onto a drop pipe in wells of that kind, and can be furnished open at both ends. The working barrel can be furnished cased in wrought-iron pipe, with coupling on each end for use where the suction pipe is dropped into the well.

**ALL BRASS OR
BRASS LINED
IRON WORKING
BARREL
With Ball
Valves**



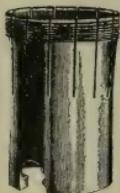
B2341

**TUBULAR
WELL DRIVE
CYLINDER
Brass Lined or
Polished Iron
Black or Gal-
vanized**



Can also furnish with Spool Valves instead of Ball Valves at special price.

B2342

PATENT ANCHORS

B2345

For Pipe Sizes 2 to 10 inch

PATENT GUM PACKER

With Brass Tube attached for holding plain brass working barrel in position.

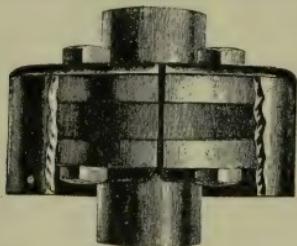


Prices
on
Application

B2346

For Pipe Sizes 2 to 12 inch

Patent Anchors for supporting Gum Packer in a tubular well that has no strainer, or when working barrel is located some distance above the strainer. Also to support an inside pump pipe.

IMPROVED SANITARY WELL CAP

B2347

The Improved Sanitary Well Cap prevents—

1. The breaking of threads on supply pipe.
2. Raising of pump and platform by windmill.
3. All foreign substances from dropping in well.
4. Surface water from getting in well.
5. Use of platform around well.

Can be put on any well, any time, by anybody, without removing pump.

| | |
|--|-------|
| Caps for 3-inch and 3½-inch wells, per dozen | 8.40 |
| " " 3½-inch wells | 9.00 |
| " " 4-inch and 4½-inch wells | 10.20 |
| " " 5½-inch wells | 15.00 |

AIR CHAMBER

B2348

With Top and Side connections, each, \$2.50.

With one connection only, each, \$2.00.

Always state make of pump Air Chamber is to fit, and best to send template showing diameter of flange, and location and size of bolt holes.

DRIVE SHOES

B2349



| Pipe Size, inch | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 8 |
|-----------------|------|------|------|------|------|------|------|------|-------|
| Steel, each | 1.00 | 1.30 | 2.00 | 3.50 | 4.00 | 6.00 | 7.00 | 9.00 | 12.00 |
| Malleable, " | .60 | .85 | 1.15 | 1.50 | 2.00 | ... | ... | ... | ... |

Larger Steel Shoes, also large size of Long Shrink Shoes, quoted on application.

CUP LEATHERS



B2360

VALVE LEATHER



B2361

PUMP LEATHERS

| Diameter of Cylinder.....inches | 1 1/4 | 1 1/2 | 1 3/4 | 2 | 2 1/4 | 2 1/2 | 2 3/4 | 3 | 3 1/4 | 3 1/2 | 4 | 4 1/2 | 5 |
|------------------------------------|-------|-------|-------|-----|-------|-------|-------|------|-------|-------|------|-------|------|
| Cup Plunger Leathers.....per dozen | .48 | .60 | .78 | .84 | .96 | 1.20 | 1.44 | 1.68 | 1.92 | 2.16 | 2.88 | 4.80 | 6.72 |
| Lower Valve " " | ..... | ..... | ..... | .67 | .75 | .84 | .92 | 1.00 | 1.09 | 1.17 | 1.33 | 1.67 | 2.50 |

Lower Valve Leathers measure about $\frac{1}{2}$ inch larger than the inside diameter of cylinder. When ordering always state "for—inch diameter cylinders," to prevent mistakes.

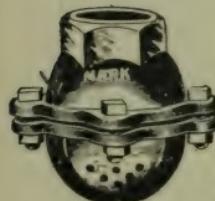
WOOD PUMP BUCKET LEATHERS—B2362

Strips 12x1 $\frac{1}{2}$ inches.....per dozen \$3.50

OAK TAN PUMP LEATHERS IN SIDES—Quoted on application

STRAINER FOOT VALVES

B2365 Black



B2365



B2366

Black, ea..75c.
Galv., ea..90c.

| Pipe Size... in. | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/4 | 3 | 3 1/2 | 4 |
|------------------|------|-------|-------|------|-------|------|-------|------|
| Screwed.....ea. | 1.30 | 1.40 | 1.90 | 2.40 | 3.30 | 3.90 | 5.60 | 7.30 |

Special net prices on small sizes quoted on application. Galvanized at special prices.
Larger sizes, see B737.

B2366 goes inside 3-in. pipe.

HORIZONTAL



B2367

VERTICAL

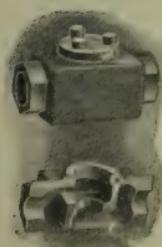


B2368

LEATHER DISC
IRON CHECK VALVES.

| Pipe Sizes..... | inches | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 |
|---------------------|--------|------|------|-------|-------|------|
| Horizontal.....each | | 1.00 | 1.25 | 1.50 | 2.00 | 2.75 |
| Vertical....." | | 1.50 | 1.75 | 2.00 | 2.50 | 3.00 |

Larger Sizes quoted on application. Galvanized Special.



B2369

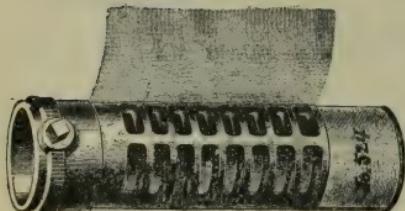
BUCKEYE HORIZONTAL CHECK VALVES

Are made with Brass Valve Seat and Poppet Valve; the cap in the top giving easy access to the working parts without disturbing the pipe.

| Pipe Sizes..... | inches | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 |
|------------------|--------|------|------|-------|-------|------|
| Plain.....each | | 1.00 | 1.25 | 1.50 | 2.00 | 2.75 |
| Galvanized....." | | 1.50 | 1.75 | 2.25 | 3.00 | 4.00 |

SUCTION STRAINERS

WITH SET SCREW



B2370

MUSHROOM STRAINER



B2371

GLOBE STRAINER
for Hose



B2372

| Size, inches..... | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 |
|--|-----|-------|-------|-------|-------|-----|
| B2370—Galvanized, and Gauze Covered...each | .28 | .32 | .36 | .50 | ... | ... |
| " Not Covered | .22 | .24 | .26 | .40 | ... | ... |
| Black, | .18 | .20 | .24 | .36 | ... | ... |
| B2371—Mushroom, Blk..... | " | 1.00 | ... | *1.00 | ... | ... |
| B2372—Globe..... | " | .50 | .65 | 1.00 | 1.50 | ... |
| " Galvanized, Special..... | .. | .. | .. | .. | .. | .. |

* Mushroom Strainer for 1½-in. iron pipe, also for 2-in. hose.

WATER
CONDUCTOR
for Pump Spout



B2375

Each, \$1.00.
Tapped for 1½-in. pipe.

HOSE CLEVIS
for Pump
Spout.



B2376

Each, 50c.

COCK SPOUT



B2378

| | | |
|--|------|------|
| No. 1, for pumps with cylinders 3 1/4 inch or less diameter, fitted for 1-inch hose coupling | each | 2.00 |
| No. 2, for pumps with cylinders larger than 3 1/4 inch, fitted for 1 1/4-inch hose coupling | each | 2.50 |

GOOSE NECKS



B2379



B2380

| B2379 | | B2380 | |
|-------------------------|-----|------------------------|-----|
| $\frac{3}{4}$ in.. each | .60 | $\frac{3}{4}$ in., ea. | .40 |
| 1 " | .60 | 1 " | .40 |
| $1\frac{1}{4}$ " " | .80 | $1\frac{1}{4}$ " " | .50 |



MALLEABLE HYDRANT CLAMP

| | | | | | |
|---|------|---------------|---------------|---------------|-----|
| Size Cock to be used with..... | inch | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | 1 |
| Threaded for $\frac{1}{2}$ -in. pipe..... | each | .20 | .20 | .20 | .20 |
| " $\frac{5}{8}$ " | " | .18 | .18 | .18 | .18 |
| With $\frac{3}{8}$ -in. square hole..... | " | .15 | .15 | .15 | .15 |

Always state whether wanted for square rod and size of square, or threaded for gas pipe, and what size pipe. Also state size of cock to be used on.

B2384

MALLEABLE IRON WOOD ROD COUPLINGS



B2385

STEEL PUMP ROD



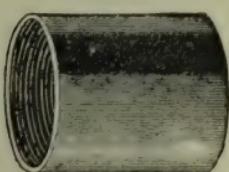
B2387

**MALLEABLE
PUMP ROD
COUPLINGS**



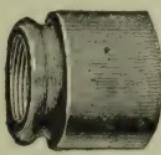
B2386

TURNED COUPLING



B2388

PLAIN MALLEABLE REDUCING COUPLING



B2389

RECESSED COUPLINGS



B2390

| | | | | | |
|--------------------------|----------------|----------------|-----|--------------------------------------|----------------------|
| Pipe Thread..... inches | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | To go inside 2-inch pipe | For Tool Rod and for |
| Right Hand Thread ... | .12 | .25 | .60 | Threaded $1\frac{1}{4}$ x1-inch Pipe | |
| Right and Left Thread .. | .24 | .40 | .60 | Each, Black.....20c. | Well Pipe. |
| | | | | Galvanized..35c. | |

RECESSED COUPLINGS—B2390

| Pipe Sizes..... inches | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 |
|----------------------------|---------------|-----|----------------|----------------|-----|----------------|------|----------------|------|
| Black, Right Hand.... | .30 | .35 | .45 | .55 | .70 | .95 | 1.40 | 1.85 | 2.25 |
| Galvanized, Right Hand.... | .35 | .40 | .55 | .70 | .90 | 1.20 | 1.70 | 2.15 | 3.25 |

EXTRA LONG TOOL ROD COUPLINGS

Not illustrated. Quoted on application.

**BRASS JACKET DRIVE WELL POINTS
GALVANIZED**


B2391

Double Screen Points have perforated brass jacket with woven brass wire screen (usually 60 gauze) underneath. The Single Screen Points have only the perforated sheet brass jacket. This jacket may have small or large holes as desired, known as fine, medium, or coarse.

The listed length of points does not include the pointed head or plug.

| Inches | No. | Length of Point | Jacket | Aggregate Number Square Inch Openings | PRICES PER DOZEN | | | |
|--------|-----|-----------------|-----------|---------------------------------------|------------------|--------------|--------------|---------------|
| | | | | | No. 60 Gauze | No. 80 Gauze | No. 90 Gauze | No. 100 Gauze |
| 1 | 74 | 2 Feet | 18 Inches | 15 | 33.00 | 46.00 | 52.00 | 62.00 |
| 1 | 76 | 2½ " | 24 " | 20 | 42.00 | 56.00 | 64.00 | 78.00 |
| 1 | 78 | 3 " | 30 " | 25 | 51.00 | 66.00 | 76.00 | 94.00 |
| 1 | 80 | 3½ " | 36 " | 30 | 60.00 | 76.00 | 88.00 | 120.00 |
| 1 | 82 | 4 " | 42 " | 35 | 69.00 | 86.00 | 100.00 | 136.00 |
| 1½ | 86 | 20 Inches | 14 " | 15 | 30.00 | 42.00 | 50.00 | 64.00 |
| 1½ | 90 | 2 Feet | 18 " | 20 | 36.00 | 52.00 | 60.00 | 80.00 |
| 1½ | 94 | 2½ " | 24 " | 26½ | 46.00 | 64.00 | 75.00 | 100.00 |
| 1½ | 98 | 3 " | 30 " | 33 | 56.00 | 76.00 | 90.00 | 120.00 |
| 1½ | 100 | 3½ " | 36 " | 39½ | 66.00 | 88.00 | 105.00 | 140.00 |
| 1½ | 102 | 4 " | 42 " | 45½ | 76.00 | 100.00 | 120.00 | 160.00 |
| 1½ | 136 | 2 " | 18 " | 22½ | 48.00 | 65.00 | 78.00 | 94.00 |
| 1½ | 140 | 2½ " | 24 " | 30 | 60.00 | 80.00 | 96.00 | 118.00 |
| 1½ | 144 | 3 " | 30 " | 37½ | 72.00 | 95.00 | 114.00 | 142.00 |
| 1½ | 146 | 3½ " | 36 " | 45 | 84.00 | 110.00 | 132.00 | 166.00 |
| 1½ | 148 | 4 " | 42 " | 52½ | 96.00 | 125.00 | 150.00 | 188.00 |
| 2 | 160 | 2 " | 18 " | 26 | 75.00 | 94.00 | 110.00 | 130.00 |
| 2 | 164 | 2½ " | 24 " | 35 | 90.00 | 112.00 | 132.00 | 160.00 |
| 2 | 168 | 3 " | 30 " | 43½ | 105.00 | 130.00 | 154.00 | 190.00 |
| 2 | 170 | 3½ " | 36 " | 52½ | 120.00 | 148.00 | 176.00 | 220.00 |
| 2 | 172 | 4 " | 42 " | 62 | 135.00 | 166.00 | 198.00 | 250.00 |
| 2 | 176 | 5 " | 54 " | 78½ | 165.00 | 202.00 | 242.00 | 310.00 |
| 2 | 180 | 6 " | 66 " | 96 | 195.00 | 238.00 | 286.00 | 370.00 |
| 2½ | 183 | 2½ " | 24 " | 40 | 155.00 | 195.00 | 220.00 | 250.00 |
| 2½ | 184 | 3 " | 30 " | 50 | 180.00 | 230.00 | 260.00 | 300.00 |
| 2½ | 188 | 4 " | 42 " | 70 | 230.00 | 300.00 | 340.00 | 400.00 |
| 3 | 200 | 3 " | 30 " | 67½ | 240.00 | 310.00 | 340.00 | 410.00 |
| 3 | 204 | 4 " | 42 " | 94½ | 300.00 | 390.00 | 430.00 | 520.00 |

3½-Inch Points—Galvanized

| | | | | | | | | |
|----|-----|--------|-----------|----|--------|--------|--------|--------|
| 3½ | 202 | 3 Feet | 30 Inches | 70 | 300.00 | 390.00 | 430.00 | 520.00 |
| 3½ | 206 | 4 " | 42 " | 98 | 360.00 | 470.00 | 520.00 | 630.00 |

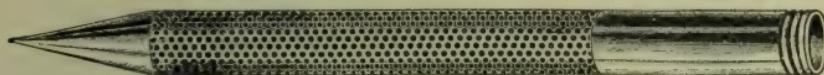
4-Inch Points—Galvanized

| | | | | | | | | |
|----|---|--------|-----------|-----|--------|--------|--------|---------|
| 4 | 216 | 4 Feet | 36 Inches | 90 | 480.00 | 560.00 | 600.00 | 700.00 |
| 4 | 220 | 6 " | 60 " | 150 | 630.00 | 760.00 | 840.00 | 1000.00 |
| 4½ | Price (end to end of pipe):.....Per ft. | | | | 4.00 | 5.00 | 5.50 | 6.00 |
| 5 | " | " | " | " | 5.00 | 6.50 | 7.25 | 8.00 |
| 6 | " | " | " | " | 5.80 | 7.25 | 8.00 | 9.00 |
| 7 | " | " | " | " | 7.00 | 8.50 | 9.25 | 10.50 |
| 8 | " | " | " | " | 8.50 | 10.00 | 11.00 | 12.00 |
| 9 | " | " | " | " | 11.00 | 13.00 | 14.00 | 15.00 |
| 10 | " | " | " | " | 13.00 | 15.25 | 16.50 | 18.00 |
| 12 | " | " | " | " | 16.00 | 18.50 | 20.00 | 22.00 |

Points 4½ inches and larger are regularly furnished open at both ends, but can be furnished with drive plug, if desired. Points 4 inches and smaller are furnished with drive plug as illustrated, unless ordered with open ends.

Points covered with 20, 30, 40, or 50 gauze at special prices.

Points longer than listed above are listed at proportionately higher prices.

BRASS JACKET TUBULAR WELL POINTS

B2393

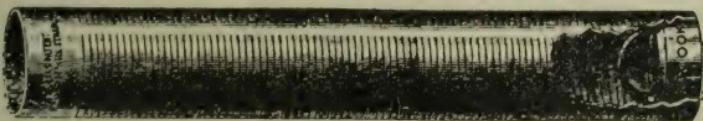
| Trade No. | Inside Diameter Inches | Length of Pipe Inches | Length of Jacket Inches | No. of Holes | PRICE PER DOZEN | | | |
|-----------|------------------------|-----------------------|-------------------------|--------------|-----------------|--------------|--------------|---------------|
| | | | | | No. 60 Gauze | No. 80 Gauze | No. 90 Gauze | No. 100 Gauze |
| 73 | 1 | 30 | 18 | 72 | 34.00 | 45.00 | 50.00 | 55.00 |
| 75 | 1 | 36 | 18 | 72 | 38.00 | 50.00 | 56.00 | 66.00 |
| 75½ | 1 | 36 | 24 | 96 | 43.00 | 55.00 | 62.00 | 77.00 |
| 77 | 1 | 42 | 24 | 96 | 47.00 | 60.00 | 68.00 | 82.00 |
| 77½ | 1 | 42 | 30 | 120 | 52.00 | 65.00 | 74.00 | 93.00 |
| 79 | 1 | 48 | 30 | 120 | 56.00 | 70.00 | 80.00 | 98.00 |
| 79½ | 1 | 48 | 36 | 144 | 61.00 | 75.00 | 86.00 | 109.00 |
| 81½ | 1 | 54 | 42 | 144 | 70.00 | 85.00 | 98.00 | 125.00 |
| 116 | 1¼ | 24 | 18 | 100 | 36.00 | 52.00 | 60.00 | 80.00 |
| 117 | 1¼ | 30 | 18 | 100 | 41.00 | 57.00 | 65.00 | 85.00 |
| 117½ | 1¼ | 30 | 24 | 130 | 46.00 | 64.00 | 75.00 | 100.00 |
| 118 | 1¼ | 36 | 24 | 130 | 51.00 | 68.00 | 80.00 | 105.00 |
| 121 | 1¼ | 36 | 30 | 165 | 56.00 | 76.00 | 90.00 | 120.00 |
| 122 | 1¼ | 42 | 30 | 165 | 61.00 | 80.00 | 95.00 | 125.00 |
| 123 | 1¼ | 48 | 30 | 165 | 66.00 | 85.00 | 100.00 | 130.00 |
| 125 | 1¼ | 42 | 36 | 200 | 66.00 | 88.00 | 105.00 | 140.00 |
| 126 | 1¼ | 48 | 36 | 200 | 71.00 | 92.00 | 110.00 | 145.00 |
| 128 | 1¼ | 60 | 36 | 200 | 81.00 | 102.00 | 120.00 | 155.00 |
| 130 | 1¼ | 54 | 42 | 230 | 81.00 | 104.00 | 125.00 | 165.00 |

1½-inch and 2-inch points quoted on application.

WASHER DRIVE WELL POINTS

B2394

| Trade No. | Inside Diameter Inches | Length of Pipe Inches | No. of Holes | PRICE PER DOZEN | | | |
|-----------|------------------------|-----------------------|--------------|-----------------|--------------|--------------|---------------|
| | | | | No. 60 Gauze | No. 80 Gauze | No. 90 Gauze | No. 100 Gauze |
| 301 | 1¼ | 24 | 60 | 36.00 | 52.00 | 60.00 | 80.00 |
| 302 | 1¼ | 30 | 80 | 46.00 | 64.00 | 75.00 | 100.00 |
| 303 | 1¼ | 36 | 100 | 56.00 | 76.00 | 90.00 | 120.00 |
| 304 | 1¼ | 42 | 120 | 66.00 | 88.00 | 105.00 | 140.00 |
| 305 | 1¼ | 48 | 140 | 76.00 | 100.00 | 120.00 | 160.00 |
| 320 | 1½ | 24 | 80 | 48.00 | 65.00 | 78.00 | 94.00 |
| 321 | 1½ | 30 | 110 | 60.00 | 80.00 | 96.00 | 118.00 |
| 322 | 1½ | 36 | 130 | 72.00 | 95.00 | 114.00 | 142.00 |
| 323 | 1½ | 42 | 150 | 84.00 | 110.00 | 132.00 | 160.00 |

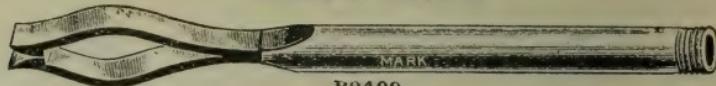
COOK'S SEAMLESS BRASS SLOTTED STRAINER

B2395

State Diameter of Weil and Length Strainer desired, and whether Fine, Coarse, or Medium. Will quote net price.

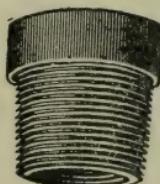
These Strainers can be furnished with one or both ends threaded inside or outside for Iron Pipe if desired.

VALVE GRAB



B2400

Price each, \$1.50.

SCREEN SETTER
AND PULLERHYDRAULIC
BLIND VALVEPIPE DRIFT
FOR TUBULAR WELL
PIPE

B2401



B2402



B2403

| | | | | | | | | |
|--------------|------|------|--------------|------|------|--------------|------|-------|
| 2 inch | each | 1.40 | 1 inch | each | 1.40 | 2 inch | each | 5.00 |
| 2½ " " | " | 2.00 | 1¼ " " | " | 2.00 | 2½ " " | " | 7.00 |
| 3 " " | " | 2.80 | 2 " " | " | 5.00 | 3 " " | " | 10.00 |

WOOD
DRIVE BLOCK

For 1¼-inch Wells

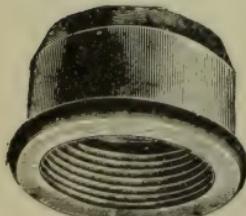
B2404

Each, \$1.50.

SMALL BRASS SAND PUMP
For 1¼-inch Wells

B2405

Each, \$1.50.

HOLLOW
STEEL DRIVE HEADMALLEABLE
DRIVE CAP

B2406



B2407



B2408

| Pipe Size | inches | 1¼ | 1½ | 2 | 2½ | 3 | 3½ | 4 | 6 |
|---------------------------------|--------|-------|-------|------|------|------|-------|-------|-------|
| B2406—Malleable Drive Cap...ea. | | .20 | .24 | .44 | 1.00 | 1.25 | ..... | 1.50 | ..... |
| B2407—Hollow Drive Head...." | | | | 4.00 | 5.20 | 6.40 | 8.00 | ..... | ..... |
| B2408—Solid " " " " | | 1.50 | 2.00 | 2.50 | 6.00 | 9.00 | ..... | 16.00 | 30.00 |

WELL DRILLS

SAND PUMP DRILLS



B2410



B2411

ROCK DRILLS

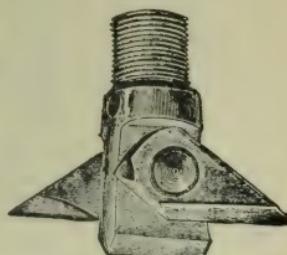


B2412



B2413

PADDY DRILL



B2414

| Size Well Pipe..... | inches | 2 | 2½ | 3 | 3¼ | 4 | 4½ | 5 | 6 |
|----------------------------|--------|------|-------|-------|-------|-------|-------|-------|-------|
| B2410—with Coupling | each | 2.00 | 3.00 | 4.00 | ..... | ..... | ..... | ..... | ..... |
| B2411—Solid, with Marble.. | " | 2.40 | 3.75 | 5.20 | 8.60 | 11.00 | ..... | ..... | ..... |
| B2412—Rock Drill..... | " | 3.75 | 4.75 | 5.25 | 7.00 | 9.50 | 14.00 | 18.50 | 23.00 |
| B2413—Z " | " | 3.35 | 4.75 | 5.00 | 6.75 | 9.50 | 11.50 | 21.00 | 24.00 |
| B2414—Paddy | " | 6.00 | 11.00 | 13.00 | 20.00 | 27.00 | 34.00 | ..... | ..... |

EXPANSION
ROCK DRILL

B2415

ROCK DRILL
B2416ROCK REAMER
B2417TWIST AUGER
B2418

| Size Well Pipe..... | inches | 2 | 2½ | 3 |
|----------------------------------|--------|-------|-------|-------|
| B2415—Expansion Rock Drill | each | 3.60 | 6.00 | 7.60 |
| B2416—Plain " | " | 4.80 | 6.60 | 8.50 |
| B2417—" " Reamer..... | " | 4.80 | 6.60 | 8.50 |
| B2418—Twist Auger..... | " | 4.15 | 5.80 | 6.60 |
| Pod Auger (not Illustrated) | " | 14.40 | 15.20 | 19.20 |

COMMON SAND
PUMP

B2420

| Size Well..... | inches | 2 | 2½ | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------|--------|------|------|------|------|------|------|------|-------|
| Each..... | | 3.00 | 3.50 | 3.75 | 4.75 | 6.00 | 7.00 | 8.50 | 10.00 |

HORN
SOCKET
B2421

¾ inch, \$3.80. 1 inch, \$4.25. 1¼ inch, \$7.40.



SMALL JARS

B2422

1 inch.....10.00

PIPE PULLER RING AND JAWS



B2424

PIPE PULLER RING

Price List of Ring Includes Jaws for One Size Pipe

| | |
|--|-------|
| No. 2, with Jaws for 2-inch Pipe (or smaller size)..... | 2.75 |
| Extra Jaws per Set: $\frac{3}{8}$ in., 90c; 1 in., 80c; $1\frac{1}{4}$ in., 75c; $1\frac{1}{2}$ in., 50c; 2 in., 50c | |
| No. 3, with Jaws for 3-inch Pipe (or smaller size)..... | 5.00 |
| Extra Jaws per Set: 2 in., 80c; $2\frac{1}{2}$ in., 75c; 3 in., 75c. | |
| No. 4, with Jaws for 4-inch Pipe (or smaller size)..... | 8.50 |
| Extra Jaws per Set: 3 in., \$2.25; $3\frac{1}{2}$ in., \$2.00; 4 in., \$1.75. | |
| No. 6, with Jaws for 6-inch Pipe (or smaller size)..... | 12.00 |
| Extra Jaws per Set: 4 in., \$3.00; $4\frac{1}{2}$ in., \$2.75; 5 in., \$2.50; 6 in., \$2.25 | |
| No. 8, with Jaws for 8-inch Pipe (or smaller size)..... | 15.00 |
| Extra Jaws per Set: 5 in., \$4.50; 6 in., \$4.00; 7 in., \$3.50; 8 in., \$3.00. | |
| No. 10, with Jaws for 10-inch Pipe (or smaller size)..... | 25.00 |
| Extra Jaws per Set: 8 in., \$7.00; 9 in., \$6.00; 10 in., \$5.00. | |

Nos. 8 and 10 are for 4 Jack Screws. See Jacks on other pages.

TAPER PULLING TAPS

For Pulling Hollow Rods



B2425

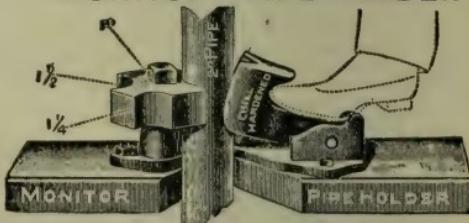
INSIDE PIPE CUTTER

B2426



Prices on application.

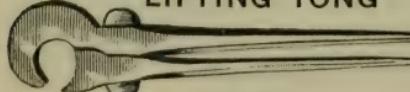
"MONITOR" PIPE HOLDER



B2427

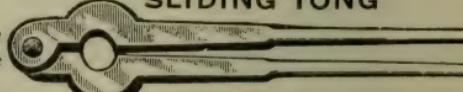
Holds pipe 1 in. to 2 in. inclusive, \$6.00.

LIFTING TONG



B2428

SLIDING TONG



B2429

| Pipe Size..... | Inches | $\frac{3}{8}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|----------------|--------|---------------|------|----------------|----------------|------|
| B2428 | each | 4.00 | 4.50 | 5.00 | 5.50 | 6.00 |
| B2429 | " | 4.00 | 4.50 | 5.00 | 5.50 | 6.00 |

JAR



BITT

STEM

ROPE SOCKETS

TEMPER SCREW

DRILLING TOOLSFOR GAS, OIL WELL, AND
WATER WELL WORK

B2431



B2432

WING.
B2433PATENT
B2434BAILER
VALVE

B2435



B2436

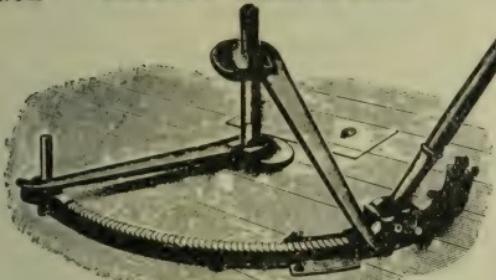
ELEVATORS

TOOL WRENCH

B2430

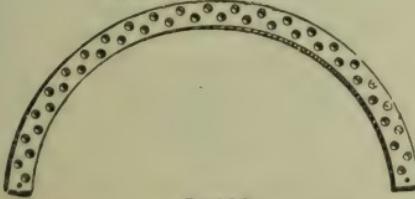
B2431

BARRETT WRENCH JACK



B2438

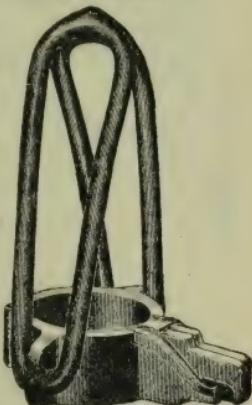
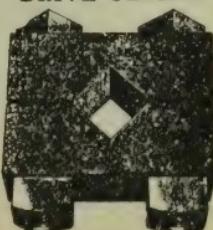
WRENCH CIRCLE



B2437

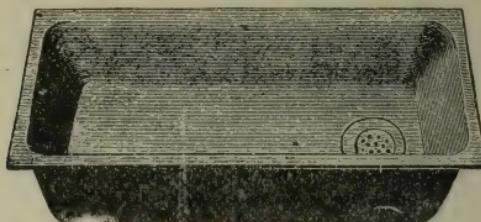
B2439

Tools on this page quoted on application. State clearly your requirements, such as dimensions, also style and size of thread on bits, etc.

B2440
DRIVE CLAMPS

B2441

SQUARE KITCHEN SINKS



CAST-IRON—B2460

| Size.....inches | 12x18 | 14x20 | 15x27 | 16x24 | 16x28 | 16x30 | 18x24 | 18x30 | 18x32 | 18x36 |
|------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Painted.....each | 1.25 | 1.50 | 2.00 | 1.90 | 2.10 | 2.25 | 2.10 | 2.50 | 2.75 | 3.25 |
| Enameled....." | 2.40 | 3.00 | 3.75 | 3.25 | 3.75 | 3.90 | 3.50 | 4.25 | 4.65 | 4.75 |
| Size.....inches | 20x24 | 20x30 | 20x36 | 20x38 | 20x40 | 20x42 | 20x48 | 22x42 | 22x62 | 24x50 |
| Painted.....each | 2.40 | 3.00 | 3.70 | 3.80 | 4.00 | 4.25 | 5.25 | 4.75 | 12.00 | 7.50 |
| Enameled....." | 3.75 | 4.50 | 5.25 | 5.50 | 5.75 | 6.00 | 6.75 | 6.25 | 30.00 | 9.00 |

Add to list Painted or Enameled for Patent Overflow \$1.50.

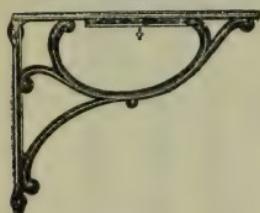
Add to list, if with Patent Overflow; Plug Strainer: Painted, \$1.75; Enamel, \$2.00.

PRESSED STEEL SINKS—B2461

| Size.....inches | 16x24 | *18x24 | 18x30 | 18x36 | 20x30 | 20x36 | 20x40 |
|------------------|-------|--------|-------|-------|-------|-------|-------|
| Painted.....each | 2.00 | 2.25 | 2.50 | 3.25 | 3.00 | 3.75 | 4.50 |
| Galvanized....." | 2.50 | 2.75 | 3.25 | 4.00 | 3.75 | 4.50 | 5.25 |

*The 18x24 Steel Sink is a special size, not made by all manufacturers.

SINK BRACKET



B2462

Black per Pair:
No. 1 \$0.70. No. 2 \$0.90.No. 1 for sinks up to 18
inches wide.No. 2 for sinks up to 22
inches wide.

OPEN SINK STRAINER



B2465

Painted ..per dozen \$1.25
Enameled .. " 2.25
Nickel Plated " 4.00SINK COUPLING
For Lead Pipe

B2463

Plain.....per dozen \$1.25

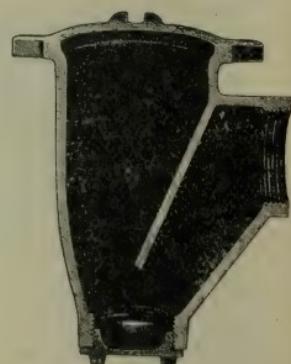
SINK COUPLING
TAPPED
For Iron Pipe

B2464

1½-in.....each \$0.60
1½ " ".60SINK PLUG, WITH
RUBBER STOPPER

B2466

Plain, Each:

Painted ...per dozen \$3.50
Enameled .. " 5.00
Nickel Plated " 8.00
Tapped, 1½-inch....\$0.70
" 1½ "80

B2467

Always state diameter, also centre to centre of bolt holes, when ordering extra
sink strainers.

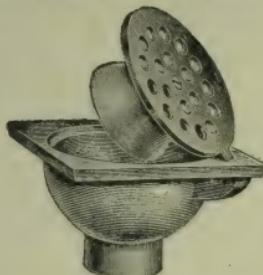
CESSPOOLS, ETC.

CESSPOOL, WITH BELL TRAP



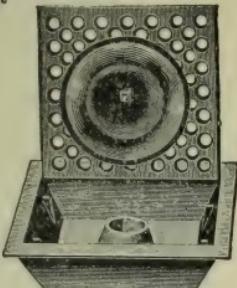
B2470

CESSPOOL, WITH BELL TRAP AND HINGED STRAINER



B2471

CELLAR TRAP

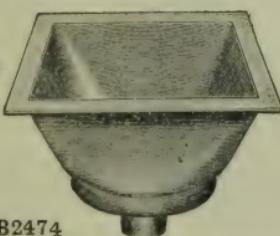


B2472

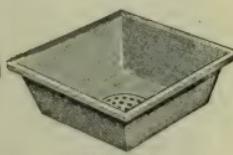
| Painted | Inches..... | Square | 6 x 6 | 9 x 9 | 12 x 12 | 13 x 13 |
|---------|-------------------------------------|--------|-------|-------|---------|---------|
| B2470 | Cesspool with Bell Trap..... | each | .75 | 1.00 | .... | 2.50 |
| B2471 | Cesspool Hinged Lid and Bell Trap.. | " | 1.00 | 1.35 | .... | 3.00 |
| B2472 | Cellar Trap..... | " | .... | 1.25 | 1.60 | .... |

EXTRA HEAVY CESSPOOL,
With Bell Trap and Grating

B2473

HARRIS SLOP SINK
With Bell Trap and
2-inch Outlet

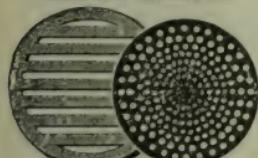
B2474

HYDRANT
CESSPOOL
Plain

B2475

| Dimen., inches | Painted | Dimen., inches | Painted | Dimen., inches | Painted |
|----------------|---------|----------------|---------|----------------|---------|
| 16 x 16 x 10 | 4.50 | 12 x 12 | 2.00 | 12 x 12 x 6 | 1.00 |
| 12 x 12 x 10 | 3.75 | 14 x 14 | 2.25 | 14 x 14 x 6 | 1.25 |
| | | 16 x 16 | 2.50 | 16 x 16 x 6 | 1.50 |

ROUND GRATES



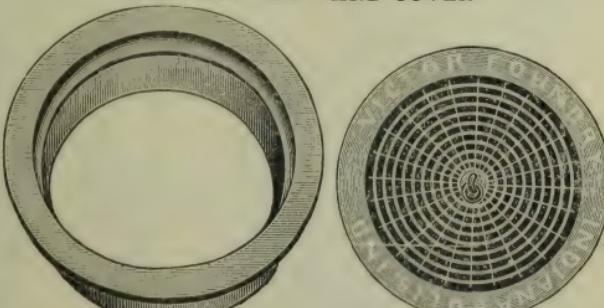
B2476 B2477

Diameter and Price each.
Bar Perforated

| Ins. | Each | Ins. | Each |
|-------|-------|------|------|
| 5½ | .15 | 6½ | .30 |
| 8¼ | .25 | 8 | .35 |
| 10 | .45 | 10 | .50 |
| 12 | .55 | 12 | .60 |
| 15 | .75 | 16 | .65 |
| ..... | ..... | 18 | .65 |

18 Perf'rat'd, Dished, 75¢

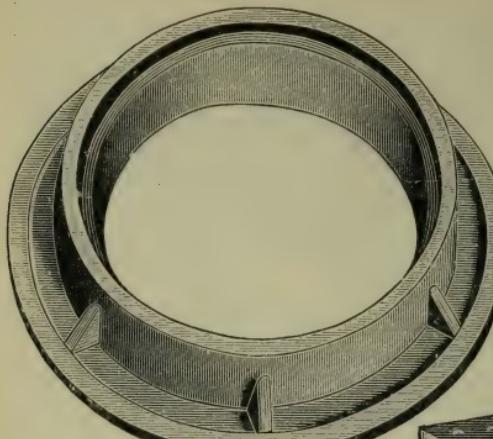
CISTERN RING AND COVER



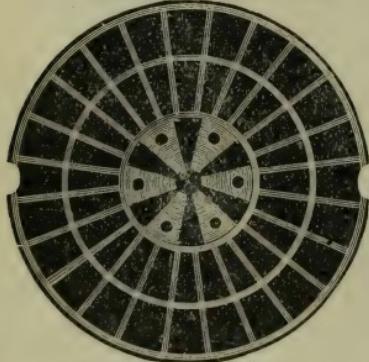
B2478

| Diam..... |inches | 16 | 18 | 20 | 22 | 24 |
|---------------------|-------------|------|------|------|------|------|
| Ring and Cover..... | | 3.50 | 3.75 | 7.00 | 8.00 | 9.00 |

Coal Hole Rings special.



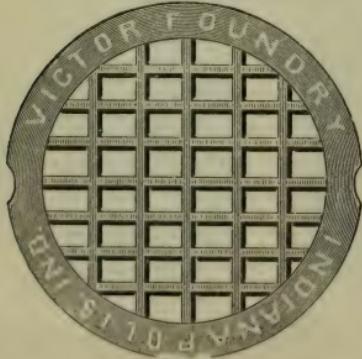
MANHOLE COVER, SOLID



B2480

With or Without Vent Holes.
No. 1, for B2481 Manhole Ring,
Diam. 24 in., Wt. 139 lbs....\$3.00

MANHOLE COVER, OPEN



B2481

No. 2, for B2481 Manhole Ring,
Diam. 24 in., Wt. 115 lbs....\$2.75

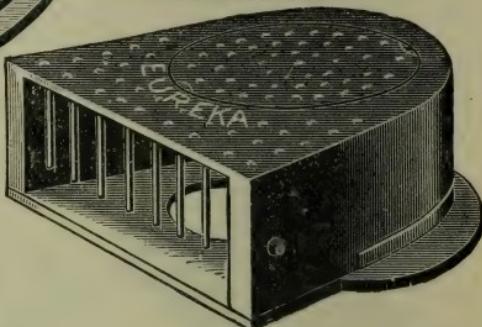
SEWER CASTINGS

MANHOLE RING, B2479

| Number | Outside Diameter Flange Inches | Diameter of Lid Inches | Height Inches | Weight of Ring, lbs. | Weight of Cover, lbs. | Price with Cover |
|--------|---|------------------------------|------------------|-------------------------|--------------------------|---------------------|
| 80 | 34 | 24 | 7 | 255 | 139 | 7.00 |
| 79 | 34 | 24 | 7 | 220 | 108 | 6.50 |
| 78 | 34 | 24 | 10 | 292 | 140 | 8.00 |
| 77 | 32 | 20 | 9 | 218 | 100 | 6.50 |
| 76 | 28 | 22 | 6 | 152 | 120 | 5.00 |
| *75 | 27 | 20 | 4 | 96 | 64 | 3.50 |

*Light Cistern Ring pattern.

EUREKA INLET



B2482

Straight Front, with Round Perpendicular Bars.

| Mouth | Discharge Hole | Approx. | Price |
|-----------|----------------|---------|-------|
| 24x8 in. | 18 in. diam. | 270lbs. | 6.00 |
| 24x12 in. | 18 " " | 300 " | 7.50 |

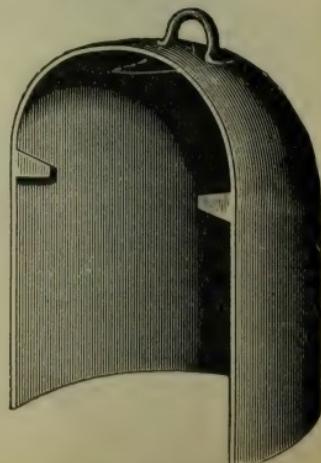
If with one Horizontal Bar, only deduct 25c.
If with Round Front, add 75c.

HOOD AND HOOKS—B2483

MANHOLE
STEP

B2483½

Each, 20c.



20-in. wide, 22-in. high.
Each, \$1.50.

PRESSURE HOUSE TANKS

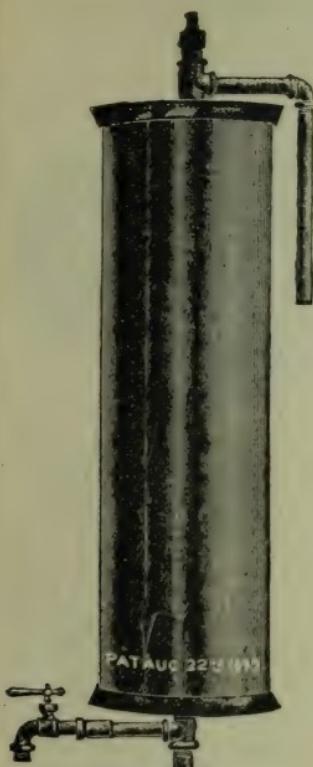
Size of Tank: 42 inches high; 13 inches diameter; capacity, 24 gallons.

One Size only: One Inch.

Price, including Relief Valve and Nickel Bibb..... \$19.00

They are made of heavy galvanized sheet steel with cast-iron ends, and are tested under one hundred pounds pressure. It is impossible for these tanks to overflow and flood the house, and as the water is forced in at the bottom and out at the top it is always fresh. They can be used with any kind of pumping outfit, and can be placed in any convenient position, either higher or lower than stock tanks, as the water is forced the entire distance.

A Relief Valve should be placed on line of pipe near the pump to prevent any possible chance of damage, should the pipe beyond the House Tank become closed by freezing or otherwise.



B2484

FLUSH HYDRANT



B2485

POST HYDRANT



B2486

HYDRANTS

For outdoor hose connection to distributing pipes, conveying water from Pneumatic Water Supply System or Elevated Tank.

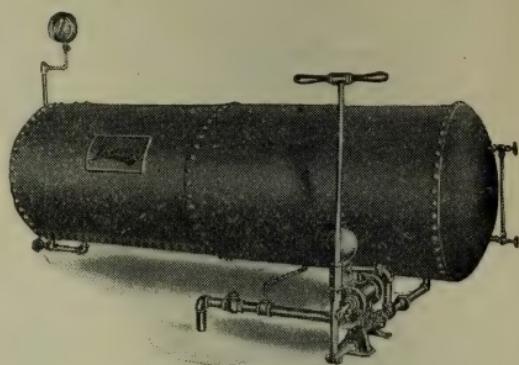
PRICE LIST

| To set in ground.....feet | 2 | 2½ or 3 | 3½ or 4 | 4½ or 5 |
|---------------------------------------|-------|---------|---------|---------|
| Post Hydrant, $\frac{3}{4}$ in...each | 9.00 | 10.00 | 11.00 | 12.00 |
| Flush " $\frac{3}{4}$ " " " | 7.50 | 8.50 | 9.50 | 10.50 |
| Post " 1 " " " | 11.50 | 12.50 | 13.50 | 14.50 |
| Flush " 1 " " " | 9.00 | 10.00 | 11.00 | 12.00 |

Post Hydrants can be furnished Self-closing at special price.

LEADER DOMESTIC WATER WORKS OUTFITS

Fig. 27 outfit has many new and commendable features, chief among them being our Improved Automatic Air Valve, which supplies and maintains the correct amount of air in the tank. The pump is of new design, and possesses many valuable features. An outfit of this type will usually deliver 10 per cent more water than a plain tank outfit of the same size. A complete outfit suitable for a family of eight persons, where water is used for kitchen, laundry, and bath-room purposes, consists of the following:



B2487. Price of Outfit, \$115.00

One 30-inch x 8-foot Leader Tank with Automatic Equipment.

One Double Acting Hand Force Pump with Brass Lined Cylinder.

One Pressure Gauge. One Water Gauge.

One 1-inch Angle Valve. One $\frac{3}{4}$ -inch Stop and Waste Cock.

One $\frac{1}{4}$ -inch Check Valve. One $\frac{1}{2}$ -inch Hose Bibb.

One $1\frac{1}{4}$ -inch Check Valve. Two Wood Tank Supports, cut to curvature of Tank.

Together with all pipe and fittings, as shown, cut and fitted, ready to set up.

Tank has a total capacity of 295 gallons and will deliver 215 gallons of water. Capacity can be increased or reduced to suit the conditions by using a larger or smaller tank.

Fig. 26 Leader Water Works outfit suitable for a medium sized residence, requires but very little space for supplying water to kitchen, laundry, and bath-room. The pump is especially designed for pumping both air and water and can be adjusted to pump either air or water. A pump of this type will deliver water from a well or cistern which may be nearby, or several hundred feet distant, but in no case should the pump be placed more than twenty feet above the level of the water in the well. The tank has a total capacity of 315 gallons and will deliver 225 gallons of water when pumped to 40 pounds pressure. The complete outfit consists of the following:

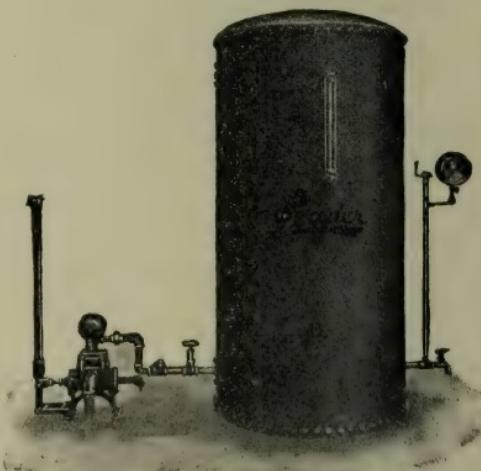
One 36 inch x 6-foot Leader

Tank. One Fig. 42 Leader Special Air and Water Force Pump with

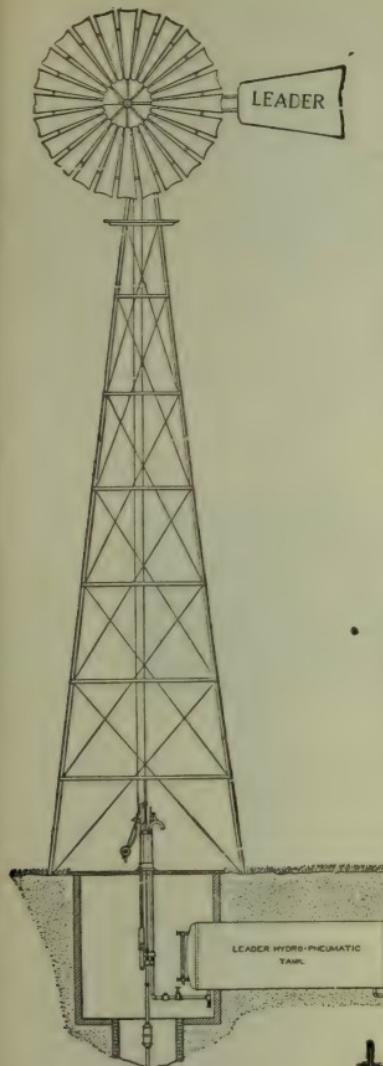
Brass Lined Cylinder. One Pressure Gauge. One Water Gauge. One 1-inch Gate Valve. One 1-inch Check Valve. One $\frac{3}{4}$ -inch Stop and Waste Cock. One $\frac{1}{2}$ inch Hose Bibb.

Together with pipe and fittings, cut and fitted, as shown, ready to set up.

The capacity of the above tank can be increased or reduced to suit conditions, and if preferred the tank can be placed horizontally instead of vertically as shown.



B2488. Price of Outfit, \$100.00



LEADER COMPOSITE OUTFIT

B2489

WITH WINDMILL POWER PUMP

Fig. 23 illustrates our Leader Water Supply System operated by a windmill. It is suitable for country and suburban homes, neighborhood water works, stock and dairy farms, etc. This outfit consists of:

One 48-inch x24-foot Leader Tank, total capacity 2260 gallons.

One Leader Automatic Windmill, with 10-foot Wheel and four post Tower, 40 feet high.

One Fig. 41 Combination Air and Water Pump.

One 1½-inch Gate Valve.

One 1¼-inch Swing Check Valve.

One Water Gauge.

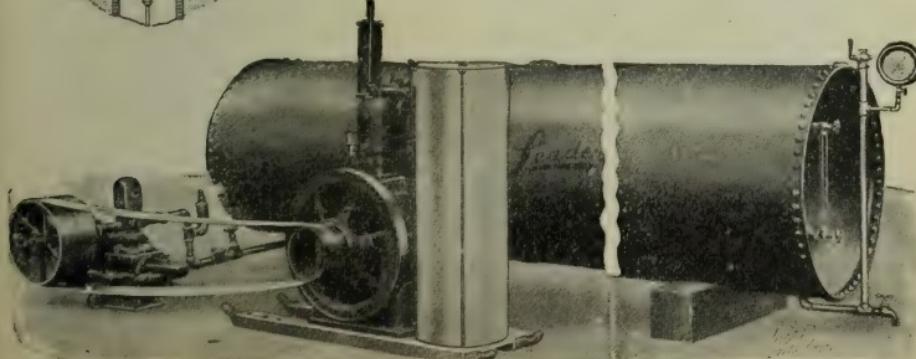
One Pressure Gauge.

One Drain Cock.

Together with all pipes and fittings as shown, cut and fitted, ready to set up. This outfit will deliver 1600 gallons of water when pumped to a pressure of 40 pounds. Being thoroughly automatic in operation, it requires no attention other than the oiling of the mill. The capacity can be increased or reduced by using a larger or smaller tank of which a list is shown on next page.

Prices on application.

B2490 See price
next page.



LEADER OUTFIT WITH POWER PUMP AND GASOLINE ENGINE

B2490 as illustrated bottom of preceding page.

Fig. 30 illustrates our Leader Water Supply System as equipped with gasoline engine and power pump. This is a favorite outfit for farm use where power is required for pumping water and other purposes. The pump is especially designed for this work, the castings are all made from metal patterns which insure both strength and ease of operation. This style outfit varies in size from 500 to 3000 gallons capacity. The size illustrated has a tank capacity of 1000 gallons and a pumping capacity of 700 gallons per hour. Complete outfit consists of the following:

One 42-inch x 14-foot Leader Tank, total capacity 1000 gallons.

One Fig. 48 Double Acting Power Force Pump with Brass Lined Cylinder.

One McVicker 2-H. P. Gasoline Engine.

One Pressure Gauge. One Water Gauge.

One 1 $\frac{1}{4}$ -inch Gate Valve. One 1 $\frac{1}{4}$ -inch Check Valve. One 1-inch Relief Valve.

One $\frac{1}{2}$ -inch Hose Bibb. One $\frac{3}{4}$ -inch Stop and Waste Cock.

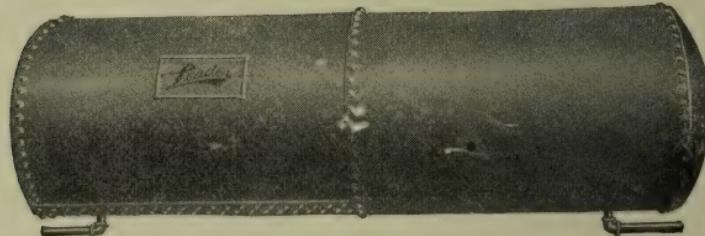
Two Wood Tank Supports, cut to curvature of tank.

Together with all pipe, fittings and belt, as shown cut and fitted, ready to set up.

List Price of Complete Outfit, \$455.00

An electric motor can be furnished instead of gasoline engine, at special price.

LEADER PNEUMATIC TANKS



B2491

| Diameter in Inches | Length in Feet | Weights | Capacity in Gallons | List Price Black | List Price Galvanized | SIZE | | Weights | Capacity in Gallons | List Price Black | List Price Galvanized |
|-----------------------|-------------------|---------|------------------------|---------------------|--------------------------|-----------------------|-------------------|---------|------------------------|---------------------|--------------------------|
| | | | | | | Diameter in Inches | Length in Feet | | | | |
| 24 | 6 | 370 | 140 | 40.00 | 56.50 | 42 | 10 | 1685 | 720 | 113.00 | 175.00 |
| 24 | 8 | 445 | 190 | 50.00 | 71.00 | 42 | 12 | 1953 | 865 | 140.00 | 211.00 |
| 24 | 10 | 525 | 235 | 56.00 | 80.50 | 42 | 14 | 2215 | 1000 | 155.00 | 238.00 |
| 30 | 6 | 558 | 220 | 52.00 | 74.00 | 42 | 16 | 2484 | 1150 | 168.00 | 260.00 |
| 30 | 8 | 677 | 295 | 64.00 | 92.00 | 48 | 10 | 2066 | 1000 | 160.00 | ..... |
| 30 | 10 | 795 | 365 | 73.00 | 105.00 | 48 | 12 | 2366 | 1130 | 178.00 | ..... |
| 30 | 12 | 914 | 440 | 82.00 | 120.00 | 48 | 14 | 2665 | 1300 | 195.00 | ..... |
| 36 | 6 | 760 | 315 | 66.00 | 93.00 | 48 | 16 | 2963 | 1500 | 217.00 | ..... |
| 36 | 8 | 926 | 420 | 78.00 | 112.50 | 48 | 18 | 3264 | 1700 | 250.00 | ..... |
| 36 | 10 | 1090 | 525 | 92.00 | 132.00 | 48 | 20 | 3565 | 1880 | 280.00 | ..... |
| 36 | 12 | 1253 | 630 | 95.00 | 140.00 | 48 | 24 | 4167 | 2260 | 311.00 | ..... |
| 42 | 8 | 1422 | 575 | 95.00 | 148.00 | | | | | | |

If with Automatic Air Attachment add to list \$20.00.

Manholes complete each list, \$15.00.

Water gauge complete with glass and rods, list \$2.25.

Pressure gauge 5" register 100 lbs., list \$2.25.

Prices of tanks are for tanks only, nothing else being furnished without extra charge.

Prices of tanks of special size either black or galvanized quoted on application.

All Leader Pneumatic Tanks have double riveted longitudinal seams and are tested to 125 pounds air pressure.

STOCK FOUNTAIN

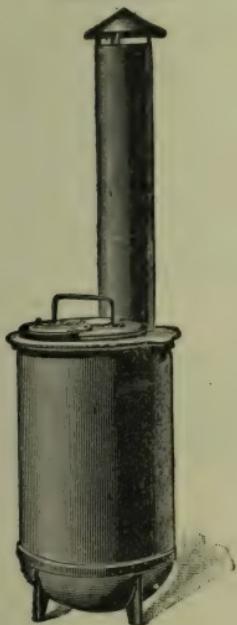
FOR HOGS AND SHEEP

**B2492**

Price-Each, 2.50

TANK HEATERS

CAST-IRON

**B2493**

Each, 7.50

With Basket Grate. Made in one piece. Heavy, compact and durable. Nothing about it to get out of order. Burns coal, wood or cobs.

Diameter, 14 inches.

Weight, 102 pounds.

ROUND WOOD TANK**B2494**

Dimensions, Capacity, and Prices quoted on application.

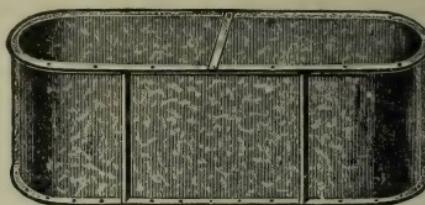
Made of Pine or Cypress.

Riveted Hoops or Lug Hoops.

Can be furnished in Shallow Pattern for Stock Watering Tanks.

Towers, Covers, etc., quoted on application.

ROUND END GALVANIZED STEEL TANKS

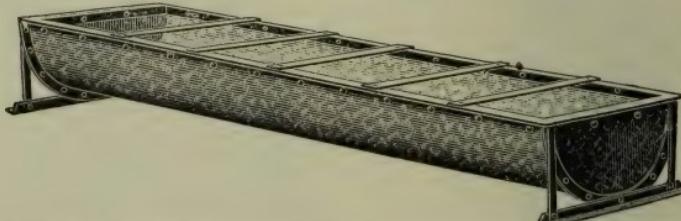


B2495

| Number | Width Feet | Height Feet | Length Feet | Capacity Bbls. | Weight Lbs. | Price | Number | Width Feet | Height Feet | Length Feet | Capacity Bbls. | Weight Lbs. | Price |
|--------|---------------|----------------|----------------|-------------------|----------------|-------|--------|---------------|----------------|----------------|-------------------|----------------|-------|
| 101 | 2 | 2 | 4 | 3 3/4 | 70 | 7.00 | 119 | 4 | 2 | 14 | 26 | 300 | 29.50 |
| 102 | 2 | 2 | 5 | 4 3/4 | 86 | 8.70 | 120 | 4 | 2 | 16 | 30 | 372 | 34.00 |
| 103 | 2 | 2 | 6 | 5 3/4 | 103 | 10.25 | 121 | 4 | 2 1/2 | 8 | 17 | 190 | 20.00 |
| 104 | 2 | 2 | 7 | 6 1/2 | 119 | 11.25 | 122 | 4 | 2 1/2 | 10 | 24 | 217 | 24.00 |
| 105 | 2 | 2 | 8 | 7 1/2 | 137 | 12.25 | 123 | 4 | 2 1/2 | 16 | 38 | 400 | 38.00 |
| 106 | 2 | 2 | 10 | 9 1/2 | 160 | 15.00 | 124 | 4 | 3 | 8 | 23 | 215 | 22.00 |
| 107 | 2 | 2 1/2 | 8 | 9 1/2 | 150 | 14.00 | 125 | 4 | 3 | 10 | 29 | 277 | 28.50 |
| 108 | 2 1/2 | 2 | 8 | 9 1/2 | 144 | 13.00 | 126 | 4 | 5 | 10 | 47 | 440 | 41.00 |
| 109 | 2 1/2 | 2 | 10 | 12 | 180 | 16.80 | 127 | 5 | 2 | 16 | 38 | 412 | 40.00 |
| 110 | 2 1/2 | 2 1/2 | 8 | 12 | 150 | 15.00 | 128 | 5 | 2 1/2 | 16 | 47 | 435 | 45.00 |
| 111 | 3 | 2 | 8 | 11 1/2 | 152 | 14.00 | 129 | 6 | 2 | 8 | 23 1/2 | 240 | 23.00 |
| 112 | 3 | 2 | 10 | 14 | 185 | 17.50 | 130 | 6 | 2 | 10 | 28 1/2 | 285 | 27.50 |
| 113 | 3 | 2 1/2 | 8 | 14 | 166 | 16.00 | 131 | 6 | 2 | 16 | 45 | 490 | 45.50 |
| 114 | 3 | 2 1/2 | 10 | 18 | 210 | 20.00 | 132 | 6 | 2 1/2 | 8 | 28 1/2 | 255 | 26.00 |
| 115 | 3 | 3 | 10 | 21 | 235 | 23.75 | 133 | 6 | 2 1/2 | 10 | 35 1/2 | 300 | 29.00 |
| 116 | 4 | 2 | 8 | 15 | 173 | 18.00 | 134 | 6 | 3 | 10 | 42 1/2 | 325 | 32.50 |
| 117 | 4 | 2 | 10 | 19 | 210 | 21.50 | 135 | 6 | 4 | 10 | 56 | 434 | 44.00 |
| 118 | 4 | 2 | 12 | 22 | 255 | 25.75 | 136 | 6 | 5 | 10 | 70 | 540 | 54.00 |

The above Tanks are shipped set up ready for use.

GALVANIZED TROUGHES — B2496



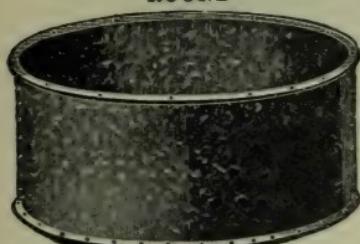
| B2496 | B2496 1/2 | | | | | | B2496 1/2 | | | | | |
|---------------|-----------------|------------------|----------------|---------------------|-------------------|---------------------|-----------|-----------------|------------------|----------------|---------------------|-------------------|
| No. | Width Inches | Height Inches | Length Feet | Capacity Gallons | Price per Foot | | No. | Width Inches | Height Inches | Length Feet | Capacity Gallons | Price per Foot |
| 81—Hog Trough | 14 | 6 1/2 | 6 | 12 | .70 | *84 Watering Trough | 21 | 10 1/2 | 6 | 30 | .80 | |
| 82— " " | 14 | 6 1/2 | 8 | 16 | .70 | *85 " " | 21 | 10 1/2 | 8 | 30 | .80 | |
| 83— " " | 14 | 6 1/2 | 10 | 20 | .70 | *86 " " | 23 | 11 1/2 | 10 | 65 | .90 | |
| | | | | | | | 87 | | | 85 | | |

*The Watering Troughs are not provided with so many cross bars as the Hog Troughs—only enough to brace it.

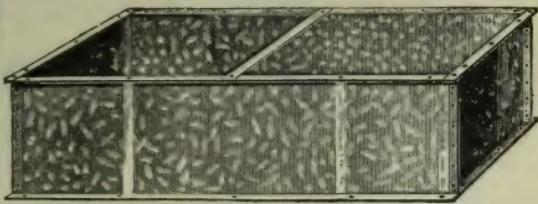
GALVANIZED STEEL TANKS

ROUND

RECTANGULAR



B2497

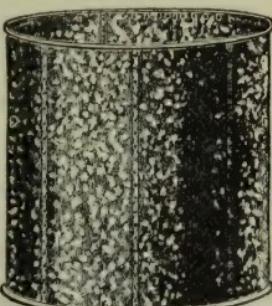


B2498

| Number | Diameter Feet | Height Feet | Capacity Barrels | Price |
|--------|------------------|----------------|---------------------|-------|
| 1 | 3 | 2 | 3 1/8 | 8.00 |
| 3 | 4 | 2 1/2 | 7 | 9.50 |
| 4 | 4 | 3 1/2 | 9 | 10.75 |
| 5 | 4 | 4 | 12 | 12.75 |
| 6 | 4 | 5 | 14 | 16.00 |
| 7 | 4 | 6 | 18 | 19.00 |
| 8 | 4 | 8 | 24 | 23.75 |
| 9 | 2 | 9 1/2 | 13.00 | 26.00 |
| 10 | 2 1/2 | 12 | 14.50 | 14.50 |
| 11 | 3 | 14 | 15.50 | 15.50 |
| 12 | 4 | 19 | 21.00 | 21.00 |
| 13 | 5 | 24 | 23.75 | 23.75 |
| 14 | 6 | 28 | 28.00 | 28.00 |
| 15 | 5 | 37 1/2 | 33.00 | 33.00 |
| 16 | 5 1/2 | 8 | 45 | 39.00 |
| 17 | 6 | 12 | 14 | 16.00 |
| 18 | 6 | 2 1/2 | 17 | 17.50 |
| 19 | 6 | 3 1/2 | 20 | 20.00 |
| 20 | 6 | 4 | 27 | 25.00 |
| 21 | 6 | 5 | 34 | 30.00 |
| *22 | 8 | 2 | 24 | 28.00 |
| *23 | 8 | 2 1/2 | 30 | 30.00 |
| *24 | 10 | 2 | 37 1/2 | 39.00 |
| *25 | 10 | 2 1/2 | 46 | 42.00 |
| *26 | 12 | 2 | 54 | 53.00 |
| *27 | 12 | 2 1/2 | 67 1/2 | 58.00 |

B2499

| | | | | |
|-----|----|----|------|--------|
| *50 | 6 | 6 | 41 | 35.00 |
| *51 | 6 | 8 | 54 | 43.00 |
| *52 | 8 | 5 | 60 | 47.50 |
| *53 | 8 | 6 | 72 | 52.50 |
| *54 | 8 | 8 | 96 | 65.00 |
| *55 | 8 | 10 | 1' 0 | 73.00 |
| *56 | 10 | 8 | 150 | 85.00 |
| *57 | 10 | 10 | 180 | 95.00 |
| *58 | 12 | 10 | 270 | 128.00 |
| *59 | 12 | 12 | 324 | 150.00 |

ROUND STORAGE TANKS
Nos. 50 to 59

B2499

Shipped Knocked Down

* Large Tanks, Nos. 22 to 27 and Nos. 50 to 59, are all too large to be shipped set up ready for use except on flat car. Unless otherwise specified in order we ship knocked down, taking a very low rate of freight. We build tanks of any gauge of galvanized steel from No. 20 to No. 16. All prices are based on No. 20, but for our larger sizes we recommend heavier metal. For No. 18 gauge, add 20 per cent to list. For No. 16 gauge, add 40 per cent to list.

MANUFACTURERS' STANDARD LIST OF

MACHINE BOLTS

With Square Heads and Square Nuts, Finished Points



ADOPTED SEPT. 20, 1899 TO TAKE EFFECT OCT. 1, 1899

B2500

PRICE PER 100

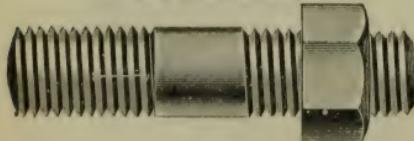
| Length Inches | $\frac{1}{4}$ | $\frac{5}{16}$ | $\frac{3}{8}$ | $\frac{7}{16}$ | $\frac{1}{2}$ | $\frac{11}{16}$ & $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{7}{8}$ | 1 |
|------------------|---------------|----------------|---------------|----------------|---------------|---------------------------------|---------------|---------------|-------|
| 1 $\frac{1}{2}$ | 1.70 | 2.00 | 2.40 | 2.80 | 3.60 | 5.20 | 7.20 | 10.50 | 15.10 |
| 2 | 1.78 | 2.12 | 2.56 | 3.00 | 3.86 | 5.58 | 7.70 | 11.20 | 16.00 |
| 2 $\frac{1}{2}$ | 1.86 | 2.24 | 2.72 | 3.20 | 4.12 | 5.96 | 8.20 | 11.90 | 16.90 |
| 3 | 1.94 | 2.36 | 2.88 | 3.40 | 4.38 | 6.34 | 8.70 | 12.60 | 17.80 |
| 3 $\frac{1}{2}$ | 2.02 | 2.48 | 3.04 | 3.60 | 4.64 | 6.72 | 9.20 | 13.30 | 18.70 |
| 4 | 2.10 | 2.60 | 3.20 | 3.80 | 4.90 | 7.10 | 9.70 | 14.00 | 19.60 |
| 4 $\frac{1}{2}$ | 2.18 | 2.72 | 3.36 | 4.00 | 5.16 | 7.48 | 10.20 | 14.70 | 20.50 |
| 5 | 2.26 | 2.84 | 3.52 | 4.20 | 5.42 | 7.86 | 10.70 | 15.40 | 21.40 |
| 5 $\frac{1}{2}$ | 2.34 | 2.96 | 3.68 | 4.40 | 5.68 | 8.24 | 11.20 | 16.10 | 22.30 |
| 6 | 2.42 | 3.08 | 3.84 | 4.60 | 5.94 | 8.62 | 11.70 | 16.80 | 23.20 |
| 6 $\frac{1}{2}$ | 2.50 | 3.20 | 4.00 | 4.80 | 6.20 | 9.00 | 12.20 | 17.50 | 24.10 |
| 7 | 2.58 | 3.32 | 4.16 | 5.00 | 6.46 | 9.38 | 12.70 | 18.20 | 25.00 |
| 7 $\frac{1}{2}$ | 2.66 | 3.44 | 4.32 | 5.20 | 6.72 | 9.76 | 13.20 | 18.90 | 25.90 |
| 8 | 2.74 | 3.56 | 4.48 | 5.40 | 6.98 | 10.14 | 13.70 | 19.60 | 26.80 |
| 9 | 2.90 | 3.80 | 4.80 | 5.80 | 7.50 | 10.90 | 14.70 | 21.00 | 28.60 |
| 10 | 3.06 | 4.04 | 5.12 | 6.20 | 8.02 | 11.66 | 15.70 | 22.40 | 30.40 |
| 11 | 3.22 | 4.28 | 5.44 | 6.60 | 8.54 | 12.42 | 16.70 | 23.80 | 32.20 |
| 12 | 3.38 | 4.52 | 5.76 | 7.00 | 9.06 | 13.18 | 17.70 | 25.20 | 34.00 |
| 13 | .... | .... | 6.08 | 7.40 | 9.58 | 13.94 | 18.70 | 26.60 | 35.80 |
| 14 | .... | .... | 6.40 | 7.80 | 10.10 | 14.70 | 19.70 | 28.00 | 37.60 |
| 15 | .... | .... | 6.72 | 8.20 | 10.62 | 15.46 | 20.70 | 29.40 | 39.40 |
| 16 | .... | .... | 7.04 | 8.60 | 11.14 | 16.22 | 21.70 | 30.80 | 41.20 |
| 17 | .... | .... | .... | .... | 11.66 | 16.98 | 22.70 | 32.20 | 43.00 |
| 18 | .... | .... | .... | .... | 12.18 | 17.74 | 23.70 | 33.60 | 44.80 |
| 19 | .... | .... | .... | .... | 12.70 | 18.50 | 24.70 | 35.00 | 46.60 |
| 20 | .... | .... | .... | .... | 13.22 | 19.26 | 25.70 | 36.40 | 48.40 |

The following extras are to be understood as a part of the Machine Bolt List:
Bolts with Hexagon Heads or Hexagon Nuts, 10 per cent extra.

If both Hexagon Heads and Hexagon Nuts, 20 per cent extra.

Special Bolts with irregular Threads and unusual dimensions of Heads or Nuts will be charged extra at the discretion of the Manufacturer.

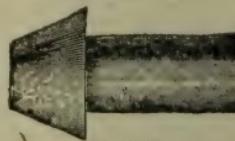
STUD BOLTS



B2501

With or without Nuts.
Prices on application.

RIVETS

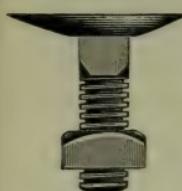


B2502

Boiler Rivets, Tank Rivets, etc., any style Head. Prices on application.

ELEVATOR BOLTS

PRICE PER HUNDRED.

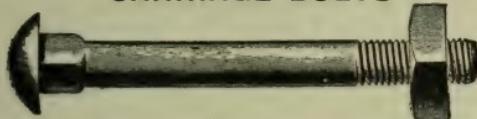
FLAT HEAD

B2503

| Length Inches | DIAMETER, INCHES | | | | RELIANCE HEAD |
|------------------|----------------------------------|----------------|---------------|----------------------------------|------------------|
| | $\frac{3}{16}$ and $\frac{1}{4}$ | $\frac{5}{16}$ | $\frac{3}{8}$ | $\frac{7}{16}$ and $\frac{1}{4}$ | |
| | Flat Head | | | Key & Reliance Head | |
| $\frac{3}{4}$ | 2.20 | ... | ... | 1.50 | |
| $\frac{5}{8}$ | 2.30 | ... | ... | 1.60 | |
| 1 | 2.30 | 3.00 | 4.00 | 1.60 | |
| $1\frac{1}{8}$ | ... | ... | ... | 1.70 | |
| $1\frac{1}{4}$ | 2.40 | 3.20 | 4.30 | 1.80 | |
| $1\frac{1}{2}$ | ... | 3.40 | 4.60 | ... | |

RELIANCE HEAD

B2504

CARRIAGE BOLTS

B2505

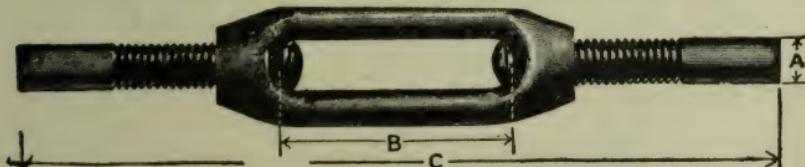
Adopted May 19, 1908, to take affect June 1, 1908.

PRICE PER HUNDRED'

| Length Inches | DIAMETER, INCHES | | | | | | | Length Inches | DIAMETER, INCHES | | | | | | |
|------------------|------------------|----------------|---------------|----------------|---------------|----------------|---------------|------------------|------------------|---------------|---------------|---------------|----------------|---------------|---------------|
| | $\frac{1}{4}$ | $\frac{5}{16}$ | $\frac{3}{8}$ | $\frac{7}{16}$ | $\frac{1}{2}$ | $\frac{9}{16}$ | $\frac{5}{8}$ | | $\frac{7}{16}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{1}{2}$ | $\frac{9}{16}$ | $\frac{5}{8}$ | $\frac{3}{4}$ |
| $1\frac{1}{2}$ | 1.00 | 1.40 | 1.90 | 2.20 | ... | ... | ... | 7 | 1.88 | 2.72 | 3.66 | 4.18 | 4.98 | 8.26 | 11.34 |
| $1\frac{3}{4}$ | 1.04 | 1.46 | 1.98 | 2.29 | ... | ... | ... | $7\frac{1}{2}$ | 1.96 | 2.84 | 3.82 | 4.36 | 5.20 | 8.60 | 11.80 |
| 2 | 1.08 | 1.52 | 2.06 | 2.38 | ... | ... | ... | 8 | 2.04 | 2.96 | 3.98 | 4.54 | 5.42 | 8.94 | 12.26 |
| $2\frac{1}{4}$ | 1.12 | 1.58 | 2.14 | 2.47 | ... | ... | ... | $8\frac{1}{2}$ | 2.12 | 3.08 | 4.14 | 4.72 | 5.64 | 9.28 | 12.72 |
| $2\frac{1}{2}$ | 1.16 | 1.64 | 2.22 | 2.56 | 3.00 | 5.20 | 7.20 | 9 | 2.20 | 3.20 | 4.50 | 4.90 | 5.86 | 9.62 | 13.18 |
| $2\frac{3}{4}$ | 1.20 | 1.70 | 2.30 | 2.65 | 3.11 | 5.37 | 7.43 | $9\frac{1}{2}$ | 2.28 | 3.32 | 4.46 | 5.08 | 6.08 | 9.96 | 13.64 |
| 3 | 1.24 | 1.76 | 2.38 | 2.74 | 3.22 | 5.54 | 7.66 | 10 | 2.36 | 3.44 | 4.62 | 5.26 | 6.50 | 10.30 | 14.10 |
| $3\frac{1}{4}$ | 1.28 | 1.82 | 2.46 | 2.83 | 3.33 | 5.71 | 7.89 | 11 | 2.52 | 3.68 | 4.94 | 5.62 | 6.74 | 10.98 | 15.02 |
| $3\frac{1}{2}$ | 1.32 | 1.88 | 2.54 | 2.92 | 3.44 | 5.88 | 8.12 | 12 | 2.68 | 3.92 | 5.26 | 5.98 | 7.18 | 11.66 | 15.94 |
| $3\frac{3}{4}$ | 1.36 | 1.94 | 2.62 | 3.01 | 3.55 | 6.05 | 8.35 | 13 | 2.84 | 4.16 | 5.58 | 6.34 | 7.62 | 12.34 | 16.86 |
| 4 | 1.40 | 2.00 | 2.70 | 3.10 | 3.66 | 6.22 | 8.58 | 14 | 3.00 | 4.40 | 5.90 | 6.70 | 8.06 | 13.02 | 17.78 |
| $4\frac{1}{4}$ | 1.44 | 2.06 | 2.78 | 3.19 | 3.77 | 6.39 | 8.81 | 15 | 3.16 | 4.64 | 6.22 | 7.06 | 8.50 | 13.70 | 18.70 |
| $4\frac{1}{2}$ | 1.48 | 2.12 | 2.86 | 3.28 | 3.88 | 6.56 | 9.04 | 16 | 3.32 | 4.88 | 6.54 | 7.42 | 8.94 | 14.38 | 19.62 |
| $4\frac{3}{4}$ | 1.52 | 2.18 | 2.94 | 3.37 | 3.99 | 6.73 | 9.27 | 17 | 3.48 | 5.12 | 6.86 | 7.78 | 9.38 | 15.06 | 20.54 |
| 5 | 1.56 | 2.24 | 3.02 | 3.46 | 4.10 | 6.90 | 9.50 | 18 | 3.64 | 5.36 | 7.18 | 8.14 | 9.82 | 15.74 | 21.46 |
| $5\frac{1}{2}$ | 1.64 | 2.36 | 3.18 | 3.64 | 4.32 | 7.24 | 9.96 | 19 | 3.80 | 5.60 | 7.50 | 8.50 | 10.26 | 16.42 | 22.38 |
| 6 | 1.72 | 2.48 | 3.34 | 3.82 | 4.54 | 7.58 | 10.42 | 20 | 3.96 | 5.84 | 7.82 | 8.86 | 10.70 | 17.10 | 23.30 |
| $6\frac{1}{2}$ | 1.80 | 2.60 | 3.50 | 4.00 | 4.76 | 7.92 | 10.88 | | | | | | | | |

PRESSED WROUGHT IRON OPEN TURNBUCKLES

WITH RIGHT AND LEFT STUB BOLT ENDS



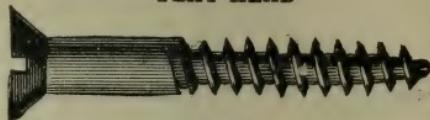
B2506

| Size | inches | $\frac{3}{8}$ | $\frac{7}{16}$ | $\frac{1}{2}$ | $\frac{9}{16}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{7}{8}$ | 1 | $1\frac{1}{8}$ | $1\frac{1}{4}$ | $1\frac{1}{8}$ | $1\frac{1}{2}$ |
|-------|--------|---------------|----------------|---------------|----------------|---------------|---------------|---------------|-----|----------------|----------------|----------------|----------------|
| Price | each | .40 | .42 | .45 | .48 | .50 | .63 | .75 | .88 | 1.00 | 1.25 | 1.58 | 1.50 |

IRON WOOD SCREWS



B2507

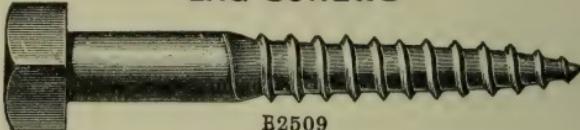


B2508

PRICE PER GROSS

| No. | Length of Screw, Inches | | | | | | | | | | | | | | | | |
|-----|-------------------------|------|------|------|------|------|------|-------|-------|-------|------|-------|-------|-------|-------|-------|------|
| | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 7/8 | 1 | 1 1/4 | 1 1/2 | 1 1/4 | 2 | 2 1/4 | 2 1/2 | 2 3/4 | 3 | 3 1/2 | 4 |
| 0 | .72 | .72 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| 1 | .72 | .72 | .72 | .72 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| 2 | .72 | .72 | .72 | .72 | .72 | .74 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| 3 | .72 | .72 | .72 | .72 | .75 | .78 | .80 | .88 | .98 | .. | .. | .. | .. | .. | .. | .. | |
| 4 | .72 | .72 | .75 | .75 | .78 | .82 | .84 | .92 | 1.05 | .. | .. | .. | .. | .. | .. | .. | |
| 5 | .. | .75 | .78 | .78 | .82 | .85 | .87 | .98 | 1.10 | 1.30 | 1.45 | 1.55 | 1.90 | .. | .. | .. | |
| 6 | .. | .78 | .80 | .82 | .85 | .90 | .92 | 1.05 | 1.15 | 1.55 | 1.50 | 1.60 | 2.00 | 2.40 | 2.95 | .. | |
| 7 | .. | .82 | .84 | .86 | .90 | .94 | .98 | 1.10 | 1.20 | 1.45 | 1.55 | 1.65 | 2.10 | 2.60 | 5.00 | .. | |
| 8 | .. | .88 | .90 | .92 | .95 | 1.00 | 1.05 | 1.15 | 1.30 | 1.50 | 1.60 | 1.75 | 2.20 | 2.70 | 3.05 | 5.90 | 4.90 |
| 9 | .. | .94 | .96 | .98 | 1.00 | 1.05 | 1.10 | 1.20 | 1.35 | 1.55 | 1.65 | 1.85 | 2.30 | 2.80 | 3.10 | 4.00 | 5.10 |
| 10 | .. | 1.05 | 1.07 | 1.10 | 1.15 | 1.20 | 1.30 | 1.40 | 1.60 | 1.75 | 1.95 | 2.40 | 2.90 | 3.15 | 4.10 | 5.20 | |
| 11 | .. | 1.10 | 1.12 | 1.15 | 1.25 | 1.30 | 1.40 | 1.50 | 1.70 | 1.85 | 2.15 | 2.50 | 3.00 | 3.20 | 4.20 | 5.30 | |
| 12 | .. | 1.20 | 1.20 | 1.25 | 1.35 | 1.40 | 1.55 | 1.65 | 1.80 | 2.00 | 2.20 | 2.60 | 3.10 | 3.30 | 4.30 | 5.40 | |
| 13 | .. | 1.25 | 1.35 | 1.45 | 1.60 | 1.70 | 1.80 | 2.00 | 2.20 | 2.35 | 2.70 | 3.20 | 3.40 | 4.40 | 5.60 | | |
| 14 | .. | 1.30 | 1.50 | 1.55 | 1.70 | 1.90 | 2.02 | 2.25 | 2.45 | 2.65 | 2.90 | 3.30 | 3.50 | 4.50 | 5.90 | | |
| 15 | .. | .. | 1.65 | 1.75 | 2.00 | 2.15 | 2.35 | 2.60 | 2.75 | 3.10 | 3.30 | 3.60 | 3.80 | 4.75 | 6.20 | | |
| 16 | .. | .. | .. | 1.80 | 2.00 | 2.50 | 2.50 | 2.80 | 2.90 | 3.15 | 3.50 | 3.65 | 3.90 | 4.20 | 4.95 | 6.50 | |
| 17 | .. | .. | .. | .. | 2.70 | 2.75 | 3.0 | 2.30 | 3.50 | 3.70 | 3.85 | 4.20 | 4.50 | 4.80 | 5.40 | 7.00 | |
| 18 | .. | .. | .. | .. | 2.80 | 3.30 | 3.80 | 4.00 | 4.20 | 4.55 | 4.70 | 5.00 | 5.50 | 6.15 | 7.60 | | |
| 19 | .. | .. | .. | .. | .. | 3.50 | 4.00 | 4.30 | 4.50 | 4.80 | 5.30 | 5.80 | 6.10 | 6.50 | 7.30 | 8.60 | |
| 20 | .. | .. | .. | .. | .. | .. | 4.80 | 5.10 | 5.20 | 5.50 | 6.10 | 6.70 | 7.20 | 7.50 | 8.70 | 9.70 | |
| 21 | .. | .. | .. | .. | .. | .. | 5.40 | 5.90 | 6.00 | 6.40 | 6.90 | 7.50 | 8.50 | 8.70 | 10.20 | 11.20 | |

LAG SCREWS

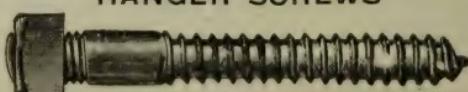


B2509

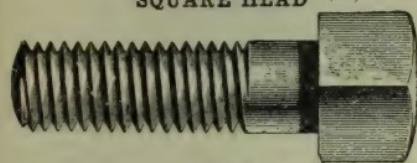
PRICE PER HUNDRED

Hexagon Heads add 10% to list.

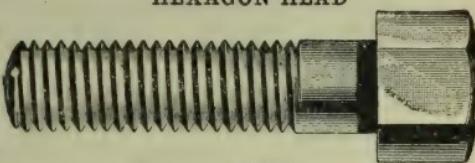
HANGER SCREWS



B2510

SQUARE AND HEXAGON HEAD CAP SCREWS**SQUARE HEAD**

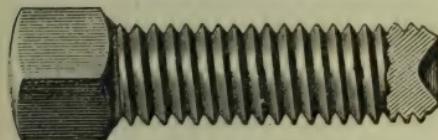
B2511

HEXAGON HEAD

B2512

PRICE PER HUNDRED

| Diameter of Head | $\frac{3}{8}$ | $\frac{7}{16}$ | $\frac{1}{2}$ | $\frac{9}{16}$ | $\frac{5}{8}$ | $\frac{11}{16}$ | $\frac{3}{4}$ | $\frac{7}{8}$ | $1\frac{1}{8}$ | $1\frac{1}{4}$ | $1\frac{3}{8}$ | $1\frac{1}{2}$ |
|-------------------------------------|----------------|----------------|---------------|----------------|---------------|-----------------|---------------|---------------|----------------|----------------|----------------|----------------|
| Diameter of Screw | $\frac{1}{4}$ | $\frac{5}{16}$ | $\frac{3}{8}$ | $\frac{7}{16}$ | $\frac{1}{2}$ | $\frac{9}{16}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{7}{8}$ | 1 | $1\frac{1}{8}$ | $1\frac{1}{4}$ |
| Threads In. | 20 | 18 | 16 | 14 | 12 | 12 | 11 | 10 | 9 | 8 | 7 | 7 |
| Length under Head to Extreme Point. | $\frac{3}{4}$ | 3.00 | 3.25 | 3.75 | 4.50 | 5.70 | ..... | ..... | ..... | ..... | ..... | ..... |
| | $\frac{5}{8}$ | 3.15 | 3.40 | 3.90 | 4.70 | 5.80 | ..... | ..... | ..... | ..... | ..... | ..... |
| | 1 | 3.25 | 3.50 | 4.00 | 4.90 | 5.90 | 9.25 | 9.25 | ..... | ..... | ..... | ..... |
| | $1\frac{1}{4}$ | 3.50 | 3.75 | 4.25 | 5.30 | 6.50 | 9.50 | 9.50 | 12.50 | ..... | ..... | ..... |
| | $1\frac{1}{2}$ | 3.75 | 4.00 | 4.50 | 5.70 | 7.10 | 10.00 | 10.00 | 13.50 | 18.40 | ..... | ..... |
| | $1\frac{3}{4}$ | 4.00 | 4.25 | 4.85 | 6.10 | 7.70 | 10.75 | 10.75 | 14.50 | 19.70 | 22.75 | ..... |
| | 2 | 4.25 | 4.85 | 5.20 | 6.50 | 8.30 | 11.50 | 11.50 | 15.50 | 21.00 | 25.00 | 34.00 |
| | $2\frac{1}{4}$ | 4.70 | 5.35 | 5.55 | 7.15 | 8.90 | 12.60 | 12.60 | 16.50 | 22.40 | 27.25 | 36.75 |
| | $2\frac{1}{2}$ | 5.25 | 5.80 | 6.00 | 7.50 | 9.50 | 13.60 | 13.60 | 17.50 | 23.70 | 29.50 | 39.50 |
| | $2\frac{3}{4}$ | 5.75 | 6.30 | 6.65 | 7.90 | 10.10 | 14.40 | 14.40 | 19.00 | 25.00 | 31.75 | 42.25 |
| | 3 | 6.25 | 6.80 | 7.20 | 8.40 | 10.70 | 15.20 | 15.20 | 20.60 | 26.40 | 34.00 | 45.00 |
| | $3\frac{1}{4}$ | ..... | ..... | ..... | 9.15 | 11.50 | 16.00 | 16.00 | 22.10 | 28.20 | 36.25 | 47.75 |
| | $3\frac{1}{2}$ | ..... | ..... | ..... | 9.75 | 12.30 | 17.30 | 17.30 | 23.70 | 30.00 | 38.50 | 50.50 |
| | $3\frac{3}{4}$ | ..... | ..... | ..... | 10.50 | 13.10 | 18.60 | 18.60 | 25.30 | 31.80 | 40.75 | 53.25 |
| | 4 | ..... | ..... | ..... | 11.10 | 13.10 | 19.90 | 19.90 | 26.90 | 33.60 | 43.00 | 56.00 |
| Add for Each $\frac{1}{4}$ In. | .40 | .50 | .60 | .70 | .80 | 1.30 | 1.30 | 1.60 | 1.80 | 2.25 | 2.75 | 3.50 |

**IRON SET SCREWS**

B2513

Case Hardened, Oval or Cup Points

PRICE PER HUNDRED

| Diameter Screw Inches | $\frac{1}{4}$ | $\frac{5}{16}$ | $\frac{3}{8}$ | $\frac{7}{16}$ | $\frac{1}{2}$ | $\frac{9}{16}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{7}{8}$ | 1 |
|-------------------------------------|----------------|----------------|---------------|----------------|---------------|----------------|---------------|---------------|---------------|-------|
| Length under Head to Extreme Point. | $\frac{1}{2}$ | 1.80 | 2.00 | 2.35 | ..... | ..... | ..... | ..... | ..... | ..... |
| | $\frac{5}{8}$ | 1.90 | 2.10 | 2.45 | 2.80 | 3.30 | ..... | ..... | ..... | ..... |
| | $\frac{3}{4}$ | 2.00 | 2.20 | 2.50 | 2.90 | 3.40 | 5.00 | 5.00 | ..... | ..... |
| | $\frac{7}{8}$ | 2.10 | 2.30 | 2.60 | 3.00 | 3.60 | 5.50 | 5.50 | ..... | ..... |
| | 1 | 2.15 | 2.35 | 2.65 | 3.10 | 3.80 | 5.75 | 5.75 | 10.00 | ..... |
| | $1\frac{1}{4}$ | 2.30 | 2.50 | 2.85 | 3.50 | 4.30 | 6.50 | 6.50 | 11.00 | 15.50 |
| | $1\frac{1}{2}$ | 2.50 | 2.70 | 3.10 | 4.00 | 4.80 | 7.25 | 7.25 | 12.00 | 16.20 |
| | $1\frac{3}{4}$ | 2.75 | 3.00 | 3.50 | 4.50 | 5.40 | 8.00 | 8.00 | 12.80 | 17.70 |
| | 2 | 3.25 | 3.50 | 4.00 | 5.15 | 6.00 | 8.80 | 8.80 | 13.60 | 19.20 |
| | $2\frac{1}{4}$ | 3.75 | 4.00 | 4.50 | 5.75 | 6.75 | 9.60 | 9.60 | 14.50 | 20.70 |
| | $2\frac{1}{2}$ | 4.25 | 4.50 | 5.00 | 6.35 | 7.50 | 10.40 | 10.40 | 15.40 | 22.20 |
| | $2\frac{3}{4}$ | 4.75 | 5.00 | 5.50 | 6.75 | 8.25 | 11.20 | 11.20 | 16.30 | 23.70 |
| | 3 | 5.25 | 5.50 | 6.00 | 7.20 | 9.00 | 12.00 | 12.00 | 17.30 | 25.20 |
| Threads to Inch | 20 | 18 | 16 | 14 | 12 | 12 | 11 | 10 | 9 | 8 |

Larger sizes quoted on application.


DIAMOND EXPANSION BOLTS COMPLETE — B2514

Malleable shields with square head screws.

Price List per 100.

| Length Inches. | DIAMETER SCREW IN INCHES. | | | | | | | | |
|-------------------|---------------------------|----------------|---------------|---------------|---------------|---------------|---------------|-------|----------------|
| | $\frac{1}{4}$ | $\frac{5}{16}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{7}{8}$ | 1 | $1\frac{1}{4}$ |
| 2 | 9.00 | 9.90 | | | | | | | |
| 2 $\frac{1}{2}$ | 9.05 | 10.00 | 12.00 | 18.80 | 23.00 | 31.00 | | | |
| 3 | 9.10 | 10.10 | 12.50 | 19.40 | 24.00 | 32.00 | | | |
| 4 | 9.20 | 10.20 | 13.00 | 20.00 | 25.00 | 33.00 | | | |
| 5 | | 10.30 | 13.90 | 20.60 | 26.00 | 34.00 | | | |
| 6 | | 10.40 | 14.10 | 20.90 | 27.00 | 35.00 | 45.00 | 56.00 | |
| 7 | | 10.50 | 14.30 | 21.20 | 28.00 | 36.00 | 46.00 | 57.00 | |
| 8 | | | 14.50 | 21.50 | 29.00 | 37.00 | 47.00 | 58.00 | |
| 9 | | | | 21.80 | 30.00 | 38.00 | 48.00 | 59.00 | |
| 10 | | | | | 31.00 | 39.00 | 49.00 | 60.00 | 76.00 |

Add for each additional inch length of bolt: 1.00 1.00 1.00 1.00 1.00 1.50

Ten per cent extra for bolts with hexagon heads.

MALLEABLE SHIELDS (ONLY) — B2515

| For diameter screw, Inches. | $\frac{1}{4}$ | $\frac{5}{16}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{7}{8}$ | 1 | $1\frac{1}{4}$ |
|-----------------------------|---------------|----------------|---------------|---------------|---------------|---------------|---------------|-------|----------------|
| Per 100..... | 8.50 | 9.00 | 11.50 | 18.00 | 22.00 | 30.00 | 41.50 | 51.00 | 64.00 |

SMALL ONE-PART COMPOSITION EXPANSION SHIELDS

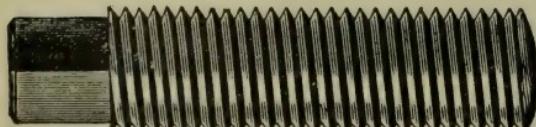
These shields are without screws. Made to fit any thread, so that any kind or make of wood screws can be used.

B2516

| No. | For Screw Number. | Lgth sh'd | Outsi diam | Per 100 | No. | For Screw Number. | Lgth Sh'd | Outsi diam | Per 100 |
|-----------------------------------|-------------------|-------------------|----------------|---------|-----------------------------------|-------------------|----------------|-----------------|---------|
| $\frac{1}{8} \times \frac{5}{8}$ | 5 or 6 | $\frac{5}{8}$ in. | $\frac{1}{4}$ | 2.10 | $\frac{1}{4} \times 1$ | 12, 13 or 14 | 1 in. | $\frac{7}{16}$ | 2.70 |
| $\frac{3}{16} \times \frac{3}{4}$ | 9, 10 or 11 | $\frac{3}{4}$ | $\frac{5}{16}$ | 2.40 | $\frac{1}{4} \times 1\frac{1}{2}$ | 12, 13 or 14 | $1\frac{1}{2}$ | $\frac{7}{16}$ | 2.70 |
| $\frac{1}{4} \times \frac{1}{2}$ | 12, 13 or 14 | $\frac{1}{2}$ | $\frac{5}{8}$ | 2.70 | $\frac{5}{16} \times \frac{3}{4}$ | 15, 16, 17 or 18 | $\frac{3}{4}$ | $\frac{15}{16}$ | 3.00 |
| $\frac{1}{4} \times \frac{3}{8}$ | 12, 13 or 14 | $\frac{3}{4}$ | $\frac{3}{8}$ | 2.70 | $\frac{1}{16} \times 1$ | 15, 16, 17 or 18 | 1 | $\frac{15}{16}$ | 3.00 |

BOILER STAY BOLTS

12 Threads per Inch



B2517

BOILER PATCH BOLTS

12 Threads to the Inch



B2518

| | | | | | | | | | |
|------------------------|----------|---------------|---------------|---------------|---------------|-----------------|------|----------------|----------------|
| Diameter of Bolts..... | inches | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{7}{8}$ | $\frac{15}{16}$ | 1 | $1\frac{1}{8}$ | $1\frac{1}{4}$ |
| Stay Bolts..... | per foot | .36 | .40 | .60 | .80 | 1.00 | 1.00 | 1.30 | 1.50 |

These bolts are made of stay bolt iron. Bolts shorter than 1 foot are figured as 1 foot each. Heads of bolts are 1 inch long and are figured in length of bolt.

| | Diameter | Length, largest Diam. of Bevel to Point | inches | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ |
|----------------|--------------------|---|--------|---------------|-------|----------------|
| Patch Bolts | $\frac{1}{2}$ inch | Per 100 | | 3.75 | 4.25 | ..... |
| | $\frac{5}{8}$ | " .. " | | 4.25 | 4.80 | 5.50 |
| | $\frac{3}{4}$ | " .. " |  | ..... | 6.50 | 7.25 |
| | $\frac{7}{8}$ | " .. " |  | ..... | 9.50 | 10.25 |
| | 1 | " .. " |  | ..... | 13.50 | 14.75 |

SQUARE

B2519

**HOT PRESSED
SQUARE AND
HEXAGON NUTS**

U. S. Standard List Jan. 1, 1906.

HEXAGON

B2520

U. S. STANDARD LIST JANUARY 1, 1906.

| Width, Inches | Thickness Inches | Hole, Inches | SQUARE | | HEXAGON | | Width, Inches | Thickness Inches | SQUARE | | HEXAGON | | | |
|---------------|---------------------|--------------|--|--------|--|--------|---------------|---------------------|--|--------|--|--------|--|--|
| | | | Price 200 - Pound Kegs Cents Per pound | | Price 200 - Pound Kegs Cents Per pound | | | | Price 200 - Pound Kegs Cents Per pound | | Price 200 - Pound Kegs Cents Per pound | | | |
| | | | Blank | Tapped | Blank | Tapped | | | Blank | Tapped | Blank | Tapped | | |
| 1/2 | 1/4 | 3/8 | 13. | 15. | 20. | 22.5 | 1 5/8 | 1 | 2 1/2 | 3 | 8.4 | 8.8 | | |
| 5/8 | 5/16 | 1/2 | 12. | 13.5 | 18. | 20. | 1 13/16 | 1 1/8 | 2 1/2 | 3 | 8.4 | 8.8 | | |
| 3/4 | 3/8 | 5/8 | 10.5 | 11.6 | 14. | 15.6 | 2 | 1 1/4 | 1 1/8 | 1 1/4 | 8.4 | 8.8 | | |
| 7/8 | 7/16 | 7/8 | 10. | 10.9 | 13. | 14.3 | 2 3/8 | 1 1/8 | 1 1/2 | 1 1/8 | 8.4 | 8.8 | | |
| 1 1/8 | 1/2 | 9/8 | 9. | 9.7 | 11.2 | 12.2 | 2 1/8 | 1 1/2 | 1 1/2 | 1 1/2 | 8.5 | 9. | | |
| 3/2 | 9/16 | 9/8 | 9. | 9.6 | 11.2 | 12.1 | 2 1/8 | 1 1/2 | 1 1/2 | 1 1/2 | 8.8 | 9.4 | | |
| 1 1/8 | 1/2 | 9/8 | 8.7 | 9.2 | 10.5 | 11.2 | 2 1/8 | 1 1/2 | 1 1/2 | 1 1/2 | 9. | 9.7 | | |
| 1 1/4 | 3/4 | 3/4 | 8.5 | 8.9 | 10. | 10.6 | 2 1/8 | 1 1/2 | 1 1/2 | 1 1/2 | 9.3 | 10. | | |
| 1 1/8 | 7/16 | 7/8 | 8.4 | 8.8 | 9.9 | 10.5 | 3 1/8 | 2 | 1 1/2 | 2 | 9.5 | 10.3 | | |
| | | | | | | | | | | | 9.7 | 10.6 | | |
| | | | | | | | | | | | 10.6 | 11.2 | | |
| | | | | | | | | | | | 12.3 | | | |

Less than keg lots (200 pounds) of a size, at special price.

SEMITFINISHED TAPPED HEXAGON NUTS — B2521

| | | | | | | | | | | | | |
|--------------------------|-----|---------|---------|---------|---------|---------|---------|---------|-------|---------|-------|-------|
| For Bolt ..inches | 1/4 | 5/16 | 9/16 | 7/8 | 1/2 | 9/16 | 5/8 | 3/4 | 7/8 | 1 | 1 1/8 | 1 1/4 |
| Width....." | 1/2 | 1 1/2 | 1 1/2 | 2 1/2 | 5/8 | 3 1/2 | 1 1/8 | 1 1/4 | 1 7/8 | 1 1/8 | 1 1/2 | 2 |
| Thickness .." | 1/4 | 1/2 | 9/16 | 1/2 | 1/2 | 1/2 | 9/16 | 3/4 | 7/8 | 1 | 1 1/8 | 1 1/4 |
| No. of Threads to inch.. | 20 | 18 | 16 | 14 | 12 | 12 | 11 | 10 | 9 | 8 | 7 | 7 |
| Each....... | .02 | .02 1/2 | .03 1/4 | .03 3/4 | .04 1/2 | .05 1/2 | .06 1/2 | .08 1/2 | .12 | .16 1/2 | .22 | .30 |

CUT WASHER

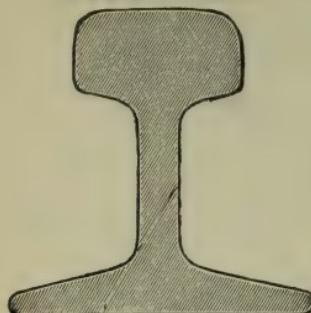
B2522

Price List**CUT WASHERS****CAST WASHER**

B2523

| Diam. Inches | Hole Inches | Thick. Wire Gauge No. | Size Bolt Inches | Per 100 lbs. in 200 lb. Kegs | Diam. Inches | Hole Inches | Thick. Wire Gauge No. | Size Bolt Inches | Per 100 lbs. in 200 lb. Kegs |
|-----------------|----------------|--------------------------------|------------------------|---------------------------------------|-----------------|----------------|--------------------------------|------------------------|---------------------------------------|
| 9/16 | 1/4 | 18 | 3/8 | 14.00 | 2 1/2 | 1 1/8 | 9 | 1 | 8.80 |
| 5/4 | 15/16 | 16 | 1/4 | 12.20 | 2 1/4 | 1 1/4 | 9 | 1 1/8 | 8.80 |
| 7/8 | 13/16 | 16 | 15/16 | 11.40 | 3 | 1 1/8 | 9 | 1 1/4 | 9.00 |
| 1 | 7/8 | 14 | 3/8 | 10.50 | 3 1/4 | 1 1/2 | 8 | 1 1/8 | 9.00 |
| 1 1/4 | 15/16 | 14 | 15/16 | 9.70 | 3 1/2 | 1 1/2 | 8 | 1 1/2 | 9.20 |
| 1 1/8 | 9/8 | 12 | 15/16 | 9.20 | 3 1/4 | 1 1/4 | 8 | 1 1/8 | 9.20 |
| 1 1/2 | 5/4 | 12 | 15/16 | 9.10 | 4 | 1 1/4 | 8 | 1 1/4 | 9.50 |
| 1 1/4 | 11/16 | 10 | 9/8 | 9.00 | 4 1/4 | 2 | 8 | 1 1/8 | 9.50 |
| 2 | 11/16 | 10 | 9/8 | 8.80 | 4 1/2 | 2 1/8 | 8 | 2 | 9.50 |
| 2 1/4 | 11/16 | 9 | 7/8 | 8.80 | ... | ... | ... | ... | ... |

CAST WASHERS — B2523{ For 1/2-inch Bolt per lb.
" 5/8- " " and larger Bolt ... "

STEEL RAIL

B2524

REGULAR TRACK SPIKE

B2525

BOAT SPIKE

B2526

Quoted on application.

State weight to the yard wanted.

REGULAR TRACK SPIKES

| | | | | | | |
|-----------------|------------------------------------|-----------------------------------|-----------------------------------|------------------------|------------------------------------|------------------------------------|
| For Rails, lbs. | 8 and 10 | 8 and 10 | 10 and 12 | 12 and 16 | 16 and 20 | 20 and 24 |
| Size..... | $\frac{5}{16} \times 2\frac{1}{2}$ | $\frac{3}{8} \times 2\frac{1}{2}$ | $\frac{3}{8} \times 3\frac{1}{2}$ | $\frac{3}{8} \times 4$ | $\frac{7}{16} \times 3\frac{1}{2}$ | $\frac{9}{16} \times 4\frac{1}{2}$ |

STANDARD LIST

| | | Per 100 lb. | Base |
|--|--|-------------|------|
| $\frac{9}{16} \times 4\frac{1}{2}$, 5 and $5\frac{1}{2}$ inch..... | | " " " | |
| $\frac{1}{2} \times 3\frac{1}{2}$, 4, $4\frac{1}{2}$ and 5 inch..... | | " " " | .05 |
| $\frac{1}{16} \times 3\frac{1}{2}$, 4 and $4\frac{1}{2}$ inch..... | | " " " | .10 |
| $\frac{3}{8} \times 3$, $3\frac{1}{2}$, 4 and $4\frac{1}{2}$ inch..... | | " " " | .20 |
| $\frac{3}{8} \times 2\frac{1}{2}$ inch..... | | " " " | .30 |
| $\frac{5}{16} \times 2\frac{1}{2}$, 3 and $3\frac{1}{2}$ inch..... | | " " " | .45 |
| 200 lbs. in a keg. | | | |

BOAT SPIKES

| | | | | |
|--|---|---|---|--|
| Add per 100 lbs. to Base Price. | $\frac{1}{4} \times 3$ to $3\frac{1}{2}$ in. .95 | $\frac{1}{4} \times 4$ to 8 in. .65 | $\frac{5}{16} \times 4$ to 8 in. .35 | $\frac{3}{8} \times 4$ to 12 in. .20 |
| | $\frac{7}{16} \times 6$ to 12 in. .10 | $\frac{1}{2} \times 6$ to 16 in. .05 | $\frac{5}{8} \times 8$ to 16 in. .05 | $\frac{3}{4} \times 12$ to 24 in. .05 |

 $\frac{3}{8}$ and $\frac{5}{16}$ in., shorter than 4 in., add extra $\frac{1}{4}$ c per lb.**SPRING COTTERS**

B2527

PRICE PER THOUSAND

| WIRE GAUGE | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 1 | ..... | ..... | ..... |
|----------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|
| Diam. in. | $\frac{3}{2}$ | $\frac{7}{4}$ | $\frac{1}{8}$ | $\frac{9}{4}$ | $\frac{5}{2}$ | $\frac{11}{4}$ | $\frac{3}{16}$ | $\frac{1}{8}$ | $\frac{7}{32}$ | $\frac{1}{4}$ | $\frac{5}{16}$ | $\frac{3}{8}$ | $\frac{7}{16}$ | $\frac{1}{2}$ |
| Length, Inches | $\frac{1}{2}$ | 3.50 | 4.00 | 5.00 | 6.00 | 7.00 | 8.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| | $\frac{3}{4}$ | 4.15 | 4.75 | 5.85 | 7.00 | 8.15 | 9.30 | 11.10 | 12.00 | ..... | ..... | ..... | ..... | ..... |
| 1 | 4.80 | 5.50 | 6.70 | 8.00 | 9.30 | 10.60 | 12.80 | 14.00 | 18.00 | 20.00 | 32.50 | ..... | ..... | ..... |
| $1\frac{1}{4}$ | 5.45 | 6.25 | 7.55 | 9.00 | 10.45 | 11.90 | 14.50 | 16.00 | 20.80 | 23.50 | 37.50 | ..... | ..... | ..... |
| $1\frac{1}{2}$ | 6.10 | 7.00 | 8.40 | 10.00 | 11.60 | 13.20 | 16.20 | 18.00 | 23.60 | 27.00 | 42.50 | 72.00 | ..... | ..... |
| $1\frac{3}{4}$ | 6.75 | 7.75 | 9.25 | 11.00 | 12.75 | 14.50 | 17.90 | 20.00 | 26.40 | 30.50 | 47.50 | 79.20 | 108.00 | ..... |
| 2 | 7.40 | 8.50 | 10.10 | 12.00 | 13.90 | 15.80 | 19.60 | 22.00 | 29.20 | 34.00 | 52.50 | 86.40 | 119.50 | 148.50 |
| $2\frac{1}{4}$ | ..... | 10.95 | 13.00 | 15.05 | 17.10 | 21.50 | 24.00 | 32.00 | 37.50 | 57.50 | 93.60 | 181.00 | 165.50 | ..... |
| $2\frac{1}{2}$ | ..... | 11.80 | 14.00 | 16.20 | 18.40 | 23.00 | 26.00 | 34.80 | 41.00 | 62.50 | 100.80 | 142.50 | 178.50 | ..... |
| $2\frac{3}{4}$ | ..... | ..... | ..... | ..... | ..... | 24.70 | 28.00 | 37.60 | 44.50 | 67.50 | 108.00 | 154.00 | 193.50 | ..... |
| 3 | ..... | ..... | ..... | ..... | ..... | 26.40 | 30.00 | 40.40 | 48.00 | 72.50 | 115.20 | 165.50 | 208.50 | ..... |

WEIGHTS OF ROUND AND SQUARE IRON AND STEEL

Per Lineal Foot

Estimated.

| Size Inches | ROUND | | SQUARE | | Size Inches | ROUND | | SQUARE | |
|-----------------|----------------|-----------------|----------------|-----------------|-----------------|----------------|-----------------|----------------|-----------------|
| | Iron Pounds | Steel Pounds | Iron Pounds | Steel Pounds | | Iron Pounds | Steel Pounds | Iron Pounds | Steel Pounds |
| $\frac{1}{4}$ | .1653 | .167 | .2105 | .212 | $\frac{1}{4}$ | 15.39 | 13.52 | 17.05 | 17.22 |
| $\frac{3}{8}$ | .2583 | .261 | .3290 | .333 | $\frac{3}{8}$ | 14.92 | 15.07 | 19.00 | 19.18 |
| $\frac{5}{8}$ | .3720 | .375 | .4736 | .478 | $\frac{5}{8}$ | 16.55 | 16.69 | 21.05 | 21.25 |
| $\frac{7}{8}$ | .5063 | .511 | .6446 | .651 | $\frac{7}{8}$ | 18.23 | 18.40 | 23.21 | 23.43 |
| $\frac{1}{2}$ | .6613 | .667 | .8420 | .850 | $\frac{1}{2}$ | 20.01 | 20.20 | 25.47 | 25.00 |
| $\frac{9}{16}$ | .8370 | .845 | 1.066 | 1.076 | $\frac{9}{16}$ | 21.64 | 22.07 | 27.55 | 28.10 |
| $\frac{5}{8}$ | 1.033 | 1.043 | 1.316 | 1.328 | $\frac{5}{8}$ | 23.81 | 24.03 | 30.31 | 30.60 |
| $\frac{11}{16}$ | 1.237 | 1.262 | 1.578 | 1.608 | $\frac{11}{16}$ | 25.57 | 26.08 | 32.55 | 33.20 |
| $\frac{3}{4}$ | 1.488 | 1.502 | 1.895 | 1.913 | $\frac{3}{4}$ | 27.94 | 28.20 | 35.57 | 35.92 |
| $\frac{13}{16}$ | 1.728 | 1.773 | 2.201 | 2.245 | $\frac{13}{16}$ | 29.82 | 30.42 | 37.97 | 38.73 |
| $\frac{7}{8}$ | 2.025 | 2.044 | 2.579 | 2.603 | $\frac{7}{8}$ | 32.41 | 32.71 | 41.26 | 41.65 |
| $\frac{15}{16}$ | 2.301 | 2.347 | 2.93 | 2.989 | $\frac{15}{16}$ | 34.4 | 35.09 | 43.8 | 44.68 |
| 1 | 2.645 | 2.670 | 3.368 | 3.400 | 1 | 37.20 | 37.56 | 47.37 | 47.82 |
| $1\frac{1}{8}$ | 3.348 | 3.379 | 4.263 | 4.303 | $1\frac{1}{8}$ | 42.33 | 42.73 | 53.89 | 54.40 |
| $1\frac{1}{4}$ | 4.133 | 4.173 | 5.263 | 5.312 | $1\frac{1}{4}$ | 47.29 | 48.24 | 60.21 | 61.41 |
| $1\frac{3}{8}$ | 5.001 | 5.049 | 6.368 | 6.423 | $1\frac{3}{8}$ | 53.57 | 54.07 | ..... | 68.85 |
| $1\frac{1}{2}$ | 5.952 | 6.008 | 7.578 | 7.650 | $1\frac{1}{2}$ | 59.07 | 60.25 | ..... | 76.71 |
| $1\frac{5}{8}$ | 6.985 | 7.051 | 8.893 | 8.978 | $1\frac{5}{8}$ | 66.13 | 66.76 | ..... | 85.00 |
| $1\frac{3}{4}$ | 8.101 | 8.178 | 10.31 | 10.41 | $1\frac{3}{4}$ | 72.16 | 73.60 | ..... | 93.72 |
| $1\frac{7}{8}$ | 9.300 | 9.388 | 11.84 | 11.95 | $1\frac{7}{8}$ | 80.02 | 80.77 | ..... | 102.8 |
| 2 | 10.58 | 10.68 | 13.47 | 13.60 | 2 | 86.56 | 88.29 | ..... | 112.4 |
| $2\frac{1}{8}$ | 11.95 | 12.06 | 15.21 | 15.35 | $2\frac{1}{8}$ | 95.23 | 96.14 | ..... | 122.4 |

WEIGHT OF FLAT STEEL BARS

Lineal Foot

Estimated.

(Iron weighs approximately 1% less than Steel.)

| Wide | THICKNESS | | | | | | | | | | | | | | | |
|--------------------|----------------|----------------|----------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|-------|
| | $\frac{1}{16}$ | $\frac{3}{32}$ | $\frac{3}{16}$ | $\frac{1}{4}$ | $\frac{5}{32}$ | $\frac{3}{8}$ | $\frac{7}{32}$ | $\frac{1}{2}$ | $\frac{9}{32}$ | $\frac{5}{8}$ | $\frac{11}{32}$ | $\frac{3}{4}$ | $\frac{13}{32}$ | $\frac{7}{8}$ | $\frac{15}{32}$ | 1 in |
| 1 in. | .2125 | .425 | .638 | .85 | 1.06 | 1.28 | 1.49 | 1.70 | 1.92 | 2.12 | 2.34 | 2.55 | 2.76 | 2.98 | 3.19 | 3.40 |
| $1\frac{1}{4}$ in. | .265 | .53 | .797 | 1.06 | 1.33 | 1.59 | 1.86 | 2.12 | 2.39 | 2.65 | 2.92 | 3.19 | 3.45 | 3.72 | 3.99 | 4.25 |
| $1\frac{1}{2}$ in. | .32 | .64 | .957 | 1.20 | 1.59 | 1.92 | 2.23 | 2.55 | 2.87 | 3.19 | 3.51 | 3.83 | 4.14 | 4.47 | 4.78 | 5.10 |
| $1\frac{3}{4}$ in. | .3725 | .745 | 1.11 | 1.49 | 1.86 | 2.23 | 2.60 | 2.98 | 3.35 | 3.72 | 4.09 | 4.47 | 4.84 | 5.20 | 5.58 | 5.95 |
| 2 in. | .425 | .85 | 1.28 | 1.70 | 2.12 | 2.55 | 2.98 | 3.40 | 3.83 | 4.25 | 4.67 | 5.10 | 5.53 | 5.95 | 6.38 | 6.80 |
| $2\frac{1}{4}$ in. | .4775 | .955 | 1.44 | 1.91 | 2.39 | 2.87 | 3.35 | 3.83 | 4.30 | 4.78 | 5.26 | 5.75 | 6.21 | 6.69 | 7.18 | 7.65 |
| $2\frac{1}{2}$ in. | .53 | 1.06 | 1.59 | 2.12 | 2.65 | 3.19 | 3.72 | 4.25 | 4.78 | 5.31 | 5.84 | 6.38 | 6.90 | 7.44 | 7.97 | 8.50 |
| $2\frac{3}{4}$ in. | .585 | 1.17 | 1.75 | 2.34 | 2.92 | 3.51 | 4.09 | 4.67 | 5.26 | 5.84 | 6.43 | 7.02 | 7.60 | 8.18 | 8.77 | 9.35 |
| 3 in. | .6375 | 1.275 | 1.91 | 2.55 | 3.19 | 3.83 | 4.46 | 5.10 | 5.74 | 6.38 | 7.02 | 7.65 | 8.29 | 8.93 | 9.57 | 10.20 |
| $3\frac{1}{4}$ in. | .69 | 1.38 | 2.07 | 2.76 | 3.45 | 4.15 | 4.83 | 5.53 | 6.22 | 6.91 | 7.60 | 8.29 | 8.93 | 9.67 | 10.36 | 11.05 |
| $3\frac{1}{2}$ in. | .745 | 1.49 | 2.23 | 2.98 | 3.72 | 4.47 | 5.20 | 5.95 | 6.70 | 7.44 | 8.18 | 8.93 | 9.67 | 10.41 | 11.16 | 11.90 |
| $3\frac{3}{4}$ in. | .7975 | 1.595 | 2.39 | 3.19 | 3.99 | 4.78 | 5.55 | 6.38 | 7.17 | 7.97 | 8.76 | 9.57 | 10.36 | 11.16 | 11.95 | 12.75 |
| 4 in. | .85 | 1.170 | 2.55 | 3.40 | 4.25 | 5.10 | 5.95 | 6.80 | 7.65 | 8.50 | 9.35 | 10.20 | 11.05 | 11.90 | 12.75 | 13.60 |
| $4\frac{1}{4}$ in. | .9025 | 1.805 | 2.71 | 3.61 | 4.52 | 5.42 | 6.32 | 7.22 | 8.15 | 9.03 | 9.93 | 10.84 | 11.74 | 12.65 | 13.55 | 14.45 |
| $4\frac{1}{2}$ in. | .9575 | 1.915 | 2.87 | 3.85 | 4.78 | 5.74 | 6.70 | 7.65 | 8.61 | 9.57 | 10.52 | 11.48 | 12.43 | 13.38 | 14.34 | 15.30 |
| $4\frac{3}{4}$ in. | 1.01 | 2.02 | 3.03 | 4.04 | 5.05 | 6.06 | 7.07 | 8.08 | 9.09 | 10.10 | 11.11 | 12.12 | 13.12 | 14.13 | 15.14 | 16.15 |
| 5 in. | 1.0625 | 2.125 | 3.19 | 4.25 | 5.31 | 6.38 | 7.44 | 8.50 | 9.57 | 10.6 | 11.69 | 12.75 | 13.81 | 14.87 | 15.94 | 17.00 |
| $5\frac{1}{4}$ in. | 1.115 | 2.23 | 3.35 | 4.46 | 5.5 | 6.69 | 7.81 | 8.93 | 10.04 | 11.16 | 12.27 | 13.39 | 14.50 | 15.62 | 16.74 | 17.85 |
| $5\frac{1}{2}$ in. | 1.1675 | 2.335 | 3.51 | 4.67 | 5.84 | 7.02 | 8.18 | 9.35 | 10.52 | 11.69 | 12.85 | 14.03 | 15.19 | 16.36 | 17.53 | 18.70 |
| $5\frac{3}{4}$ in. | 1.2225 | 2.445 | 3.67 | 4.89 | 6.11 | 7.34 | 8.56 | 9.77 | 11.00 | 12.22 | 13.44 | 14.67 | 15.88 | 17.10 | 18.33 | 19.55 |
| 6 in. | 1.275 | 2.55 | 3.83 | 5.10 | 6.38 | 7.65 | 8.93 | 10.20 | 11.48 | 12.75 | 14.03 | 15.30 | 16.58 | 17.85 | 19.13 | 20.40 |

STANDARD IRON CLASSIFICATION

FLATS

| | | | |
|-------------------------|-----------|-----------------------------|-----------|
| 1½ to 4x ¾ to 1 in..... | Base. | 8½ to 10 x 1½ to 1½ in..... | .90 extra |
| 4¼ to 6x ¾ to 1 "..... | .10 extra | 8½ to 10 x 1½ to 2 " | .100 " |
| 4½ to 6x 1½ to 1½ " | .40 | 2 to 4 x 2½ to 3 " | .60 " |
| 6½ to 8x 1½ to 1½ " | .60 | 4½ to 6 x 2½ to 3 " | .80 " |
| 6½ to 8x ¾ to 1 "..... | .60 | 6½ to 8 x 2½ to 3 " | .100 " |
| 8½ to 10x ¾ to 1 "..... | .80 | 1½ to 1¾ x ¾ to 1 " | .10 " |
| 1½ to 4x 1½ to 1½ " | .30 | 1 to 1½ x ¾ to ¾ " | .20 " |
| 2 to 4x 1½ to 2 "..... | .50 | ¾ to 1½ x ¾ to ¾ " | .40 " |
| 4½ to 6x 1½ to 2 "..... | .60 | ¾ to 1½ x ¾ to ¾ " | .50 " |
| 6½ to 8x 1½ to 2 "..... | .80 | ½ to 1½ x ¾ to ½ " | .90 " |

ROUNDS AND SQUARES

| | |
|-----------------|-----------|
| 1 to 1½ in..... | Base. |
| 2 to 2½ "..... | .20 extra |
| 3 to 3½ "..... | .50 " |
| 3½ to 4 "..... | .80 " |
| 4½ to 4½ "..... | 1.00 " |
| 4½ to 5 "..... | 1.30 " |
| 5½ to 6 "..... | 1.80 " |
| 6½ to 6½ "..... | 2.20 " |
| 6½ to 7½ "..... | 2.50 " |
| 3½ to 7½ "..... | .10 " |
| 2½ to 1½ "..... | .20 " |
| ½ to 1½ "..... | .30 " |
| 7½ to 3½ "..... | .40 " |
| ½ to 3½ "..... | .50 " |
| ½ to 3½ "..... | .70 " |
| ½ to 3½ "..... | .90 " |
| ½ to 3½ "..... | 1.40 " |
| 1½ in..... | 2.50 " |

OVAL IRON

| | |
|---------------------|-----------|
| % to 1½ in.... | .40 extra |
| ¾ to 1½ "..... | .50 " |
| ½ to 1½ "..... | .60 " |
| ½ to 1½ "..... | .80 " |
| ¾ to 1½ "..... | 1.10 " |
| ½ to 1½ x ¾ in..... | 1.00 " |
| ½ to 1½ x ¾ "..... | 1.20 " |

HEAVY IRON BAND

| | |
|------------------------|------|
| Extra | |
| 8½ to 10 x ¼ to 1½ in. | .70 |
| 7 to 8 x ¼ to 1½ " | .70 |
| 6½ to 6¾ x ¼ to 1½ " | .50 |
| 4½ to 6 x ¼ to 1½ " | .30 |
| 1½ to 4 x ¼ to 1½ " | .20 |
| 1 to 1¾ x ¼ to 1½ " | .30 |
| ¾ to 1¾ x ¼ to 1½ " | .50 |
| ½ to 1¾ x ¼ to 1½ " | .80 |
| ½ to 1¾ x ¼ to 1½ " | 1.00 |
| ¾ to 1¾ x ¼ to 1½ " | 1.50 |

HALF OVAL AND HALF ROUND

| | |
|-----------------|-----------|
| 2½ to 3 in..... | .60 extra |
| % to 2 "..... | .50 " |
| ¾ to 1½ "..... | .70 " |
| % to 1½ "..... | .90 " |
| ½ to 1½ "..... | 1.20 " |
| % to 1½ "..... | 2.50 " |
| ½ in..... | 3.50 " |
| ¼ in..... | 4.50 " |

Half ovals less than $\frac{1}{4}$ their width in thickness, extra price.

Extra for cutting bar iron to specified length.

LIGHT BANDS

| | |
|----------------------------------|-----------|
| 7 to 8 x No. 9 to 1½ | .90 extra |
| 7 to 8 x Nos. 10, 11, 12 | 1.00 " |
| 6½ to 6¾ x No. 9 to 1½ | .70 " |
| 6½ to 6¾ x Nos. 10, 11, 12 | .80 " |
| 4½ to 6 x No. 9 to 1½ | .50 " |
| 4½ to 6 x Nos. 10, 11, 12 | .60 " |
| 1½ to 4 x No. 9 to 1½ | .40 " |
| 1½ to 4 x Nos. 10, 11, 12 | .50 " |
| 1 to 1½ x No. 9 to 1½ | .50 " |
| 1 to 1½ x Nos. 10, 11, 12 | .60 " |

NORWAY AND SWEDISH IRON

ROUND AND SQUARES—Extras per 100 Pounds

| | | | |
|-------------------|------|------------------|------|
| 1 to 1½ inch..... | Base | ½ to ½ inch..... | .30 |
| 2 " 2½ " | .10 | % inch..... | .40 |
| 2½ " 3½ " | .20 | ½ " | .60 |
| 3½ " 4 " | .50 | ¾ " | 1.00 |
| ¾ " ½ " | .10 | ½ to ½ inch..... | 1.50 |
| ½ " ½ " | .20 | | |

FLATS

| | | | |
|-----------------------------------|------|----------------------------|------|
| 1½ to 4x ¾ to 1 inch..... | Base | ½ to 6 x ¼ and ½ inch..... | .20 |
| 4¼ " 6x ¾ " 1 " | .10 | 1 " 1¾ x ¼ " ½ " | .30 |
| 1¾ " 6x 1½ " 1½ " | .20 | ¾ and % x ¼ " ½ " | .50 |
| 2½ " 6x 2 inch..... | .50 | ½ " % x ¼ " ½ " | 1.00 |
| 1½ and 1¾ x ¾ to 1 inch..... | .10 | 1 to 2 x ½ inch..... | .50 |
| 1 " 1½ x ¾ to ¾ " | .20 | ¾ and % x ½ " | .80 |
| ½, ¾, ¾ and % x ¾ to ¾ inch | .40 | ½ " % x ½ " | 1.20 |

NAIL RODS

% x ½ inches, 25 and 50 pounds bundles..... 1.50

STANDARD STEEL CLASSIFICATION ROUNDS AND SQUARES—Extras per 100 Pounds.

| | | | | | |
|--|------|---|------|---|------|
| $\frac{3}{4}$ to 3 inches | Base | $\frac{7}{8}$ inches | 1.00 | $5\frac{1}{2}$ to $5\frac{1}{2}$ inches | .50 |
| $\frac{5}{8}$ " $\frac{11}{16}$ " | .10 | $\frac{7}{8}$ " | 2.00 | $5\frac{5}{8}$ " 6 " | .75 |
| $\frac{1}{2}$ " $\frac{9}{16}$ " | .20 | $3\frac{1}{8}$ to $3\frac{1}{2}$ inches | .15 | $6\frac{1}{8}$ " $6\frac{1}{2}$ " | 1.00 |
| $\frac{1}{2}$ inches | .40 | $3\frac{9}{16}$ " 4 " | .25 | $6\frac{5}{8}$ " $7\frac{1}{4}$ " | 1.25 |
| $\frac{1}{8}$ " | .50 | $4\frac{1}{16}$ " $4\frac{1}{2}$ " | .30 | | |
| $\frac{3}{8}$ " | .60 | $4\frac{9}{16}$ " 5 | .40 | | |
| $\frac{1}{4}$ to $\frac{3}{4}$ inches | .70 | | | | |

FLAT BARS AND HEAVY BANDS

| | | | |
|--|------|---|------|
| 1 to 6 x $\frac{3}{8}$ to 1 inches | Base | $\frac{7}{16}$ x $\frac{3}{8}$ inches | 1.00 |
| 1 " $6\frac{1}{4}$ and $5\frac{1}{16}$ " | .20 | $\frac{7}{16}$ x $\frac{3}{4}$ and $1\frac{1}{16}$ inches | 1.20 |
| $\frac{11}{16}$ " $1\frac{1}{2}$ x $\frac{3}{8}$ to $\frac{3}{4}$ " | .40 | $\frac{3}{8}$ x $1\frac{1}{4}$ " | 1.50 |
| $\frac{1}{16}$ " $1\frac{1}{2}$ x $\frac{3}{4}$ and $1\frac{1}{16}$ " | .50 | $1\frac{1}{8}$ to 6 x $1\frac{1}{16}$ to $1\frac{1}{16}$ inches | .10 |
| $\frac{1}{16}$ and $\frac{3}{8}$ x $\frac{3}{8}$ to $\frac{1}{2}$ " | .50 | $1\frac{1}{8}$ " 6 x $1\frac{1}{4}$ " $1\frac{1}{2}$ " | .20 |
| $\frac{1}{16}$ " $\frac{3}{8}$ x $\frac{1}{4}$ and $\frac{5}{16}$ inches | .70 | $1\frac{1}{4}$ " 6 x $1\frac{1}{8}$ " $2\frac{1}{4}$ " | .30 |
| $\frac{1}{2}$ x $\frac{3}{8}$ and $\frac{1}{16}$ inches | .90 | $3\frac{1}{8}$ " 6 x 3 " 4 | .40 |
| $\frac{1}{2}$ x $\frac{1}{4}$ " $\frac{5}{16}$ " | 1.10 | | |

LIGHT BARS AND BANDS

| | | | |
|--|------|---|------|
| 1 $\frac{1}{2}$ to 6 in. x Nos. 7, 8, 9 and $\frac{3}{16}$ in. | .40 | $\frac{9}{16}$ and $\frac{5}{8}$ in. x Nos. 7, 8, 9 and $\frac{3}{16}$ in. | 1.20 |
| 1 $\frac{1}{2}$ " 6 " x " 10, 11, 12 " $\frac{1}{8}$ " | .60 | $\frac{9}{16}$ " $\frac{5}{8}$ " x " 10, 11, 12 " $\frac{1}{8}$ " | 1.30 |
| 1 to $1\frac{1}{16}$ " x " 7, 8, 9 " $\frac{1}{8}$ " | .50 | $1\frac{1}{2}$ in. x Nos. 7, 8, 9 and $\frac{3}{16}$ in. | 1.30 |
| 1 " $1\frac{1}{16}$ " x " 10, 11, 12 " $\frac{1}{8}$ " | .70 | $1\frac{1}{2}$ " x " 10, 11, 12 " $\frac{1}{8}$ " | 1.50 |
| $\frac{13}{16}$ " $\frac{15}{16}$ " x " 7, 8, 9 " $\frac{1}{8}$ " | .70 | $\frac{13}{16}$ " x " 7, 8, 9 " $\frac{1}{8}$ " | 1.80 |
| $\frac{13}{16}$ " $\frac{15}{16}$ " x " 10, 11, 12 " $\frac{1}{8}$ " | .80 | $\frac{13}{16}$ " x " 10, 11, 12 " $\frac{1}{8}$ " | 2.10 |
| $\frac{13}{16}$ " $\frac{24}{32}$ " x " 7, 8, 9 " $\frac{1}{8}$ " | 1.00 | $\frac{13}{16}$ " x " 7, 8, 9 " $\frac{1}{8}$ " | 1.90 |
| $\frac{13}{16}$ " $\frac{3}{4}$ " x " 10, 11, 12 " $\frac{1}{8}$ " | 1.20 | $\frac{9}{8}$ " x " 10, 11, 12 " $\frac{1}{8}$ " | 2.40 |

OVALS

$\frac{1}{2}$ OVALS AND $\frac{1}{2}$ ROUNDS

| | | | |
|---|------|--|------|
| $\frac{5}{8}$ to 1 $\frac{1}{4}$ inches | .40 | $\frac{7}{8}$ to 2 inches x $\frac{7}{32}$ in. and thicker | .50 |
| $\frac{3}{4}$ " $\frac{11}{16}$ " | .50 | $\frac{3}{4}$ " $\frac{11}{16}$ " X $\frac{13}{32}$ " | .80 |
| $\frac{5}{8}$ " $\frac{11}{16}$ " | .60 | $\frac{5}{8}$ " $\frac{11}{16}$ " X $\frac{3}{32}$ " | 1.00 |
| $\frac{1}{2}$ " $\frac{9}{16}$ " | .80 | $\frac{1}{2}$ " $\frac{9}{16}$ " X $\frac{3}{32}$ " | 1.30 |
| $\frac{3}{8}$ " $\frac{15}{16}$ " | 1.00 | $\frac{3}{8}$ " X $\frac{3}{32}$ " | 2.50 |

For intermediate sizes, the next highest extra will be charged.

Horse Shoe Steel, $\frac{3}{8}$ to $1\frac{1}{2}$ inch by $\frac{5}{16}$ to $\frac{3}{8}$ inch. \$1.00 per 100 lbs. extra.
Angles, Tees and Channels quoted on application.

TOOL STEEL CLASSIFICATION

Extras per Pound

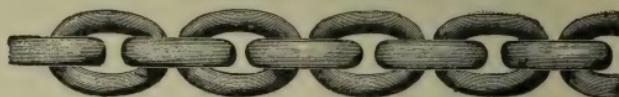
ROUND, SQUARE AND OCTAGON

| | | | | | |
|------------------------------|-------------------|--|-------------------|-------------------------|-----|
| $\frac{5}{8}$ to 2 inch | Base | 6 $\frac{1}{8}$ to 7 inch | .03 | $\frac{1}{4}$ inch | .03 |
| $2\frac{1}{8}$ " 3 " | .01 | $7\frac{1}{8}$ " 8 " | .03 $\frac{1}{2}$ | $\frac{3}{8}$ " | .05 |
| $3\frac{1}{8}$ " 4 " | .01 $\frac{1}{2}$ | $\frac{9}{16}$ " $\frac{15}{16}$ " | .00 $\frac{1}{2}$ | $\frac{5}{8}$ " | .10 |
| $4\frac{1}{8}$ " 5 " | .02 | $\frac{1}{2}$ " $\frac{3}{8}$ " | .01 | $\frac{7}{16}$ " | .18 |

FLAT

| | | | | | |
|---|-------------------|---|-------------------|--|-------------------|
| $\frac{5}{8}$ to 2 inch thick x $\frac{9}{16}$ to 2 inch wide | Base | | | | |
| $\frac{1}{8}$ X $\frac{3}{8}$ inch | .20 | $\frac{3}{8}$ X $7\frac{1}{8}$ to 8 in. | .02 | $\frac{9}{16}$ to 2 x $\frac{5}{8}$ to 2 in. | Base |
| $\frac{1}{8}$ X $\frac{1}{4}$ " | .15 | $\frac{1}{4}$ X $\frac{15}{16}$ " $\frac{5}{8}$ " | .02 | $\frac{9}{16}$ " 2 x $2\frac{1}{8}$ to 7 | .01 |
| $\frac{1}{8}$ X $\frac{9}{16}$ " | .08 | $\frac{1}{4}$ X $\frac{7}{8}$ " $\frac{5}{8}$ " | .01 $\frac{1}{2}$ | $\frac{9}{16}$ " $1\frac{1}{4}$ x $7\frac{1}{8}$ " 8 | .01 |
| $\frac{1}{8}$ X $\frac{15}{16}$ " | .04 | $\frac{1}{4}$ X $\frac{11}{16}$ " 2 " | .01 $\frac{1}{2}$ | $1\frac{1}{8}$ " 2 x $7\frac{1}{8}$ " 8 | .01 $\frac{1}{2}$ |
| $\frac{1}{8}$ X $\frac{17}{16}$ to $\frac{1}{2}$ in. | .03 | $\frac{1}{4}$ X $2\frac{3}{8}$ " 7 | .01 | $2\frac{1}{8}$ " 3 x $2\frac{1}{8}$ " 5 | .01 |
| $\frac{1}{8}$ X $\frac{17}{16}$ " 7 " | .02 | $\frac{1}{4}$ X $7\frac{1}{8}$ " 8 | .02 | $2\frac{1}{8}$ " 3 x $5\frac{1}{8}$ " 8 | .01 $\frac{1}{2}$ |
| $\frac{1}{8}$ X $\frac{7}{8}$ " 8 " | .03 | $\frac{1}{8}$ X $\frac{3}{8}$ " $\frac{5}{8}$ " | .01 $\frac{1}{2}$ | $3\frac{1}{8}$ " 4 x $3\frac{1}{8}$ " 6 | .01 $\frac{1}{2}$ |
| $\frac{1}{8}$ X $\frac{1}{4}$ inch | .05 | $\frac{1}{8}$ X $\frac{11}{16}$ " 8 | .01 | $3\frac{1}{8}$ " 4 x $6\frac{1}{8}$ " 8 | .02 |
| $\frac{1}{8}$ X $\frac{15}{16}$ " | .04 | $\frac{1}{8}$ X $\frac{15}{16}$ " 8 | .01 | $4\frac{1}{8}$ " 5 x $4\frac{1}{8}$ " 7 | .02 |
| $\frac{1}{8}$ X $\frac{17}{16}$ " | .03 | $\frac{1}{8}$ X $\frac{1}{2}$ " 8 | .01 | $4\frac{1}{8}$ " 5 x $7\frac{1}{8}$ " 8 | .02 $\frac{1}{2}$ |
| $\frac{1}{8}$ X $\frac{7}{8}$ to $\frac{5}{8}$ in. | .02 | $\frac{1}{2}$ X $\frac{9}{16}$ " 8 | .01 | $5\frac{1}{8}$ " 6 x $5\frac{1}{8}$ " 8 | .02 $\frac{1}{2}$ |
| $\frac{1}{8}$ X $\frac{15}{16}$ " 2 " | .01 $\frac{1}{2}$ | $\frac{1}{8}$ X $2\frac{1}{8}$ " 8 | .01 | $6\frac{1}{8}$ " 7 x $6\frac{1}{8}$ " 7 | .03 |
| $\frac{1}{8}$ X $2\frac{1}{8}$ " 7 " | .01 | | | $6\frac{1}{8}$ " 8 x $7\frac{1}{8}$ " 8 | .03 $\frac{1}{2}$ |

CABLE CHAIN



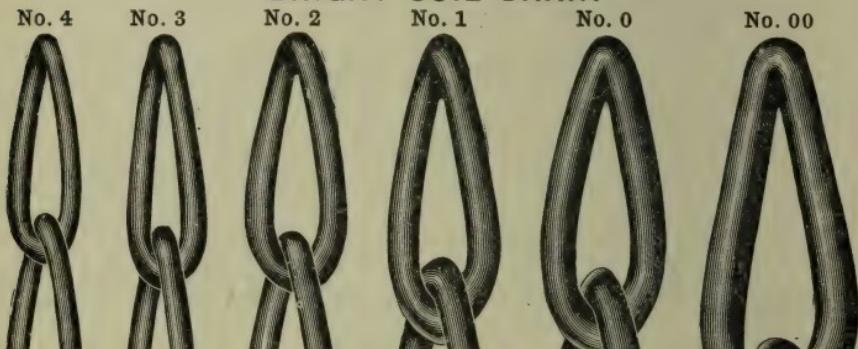
B2529

Can also be furnished Twist Links.

| | | | | | | | | | | | | |
|--|------|----------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|---------------|---------------|----|
| Size Iron | inch | $\frac{3}{16}$ | $\frac{1}{4}$ | $\frac{5}{16}$ | $\frac{3}{8}$ | $\frac{7}{16}$ | $\frac{1}{2}$ | $\frac{9}{16}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{7}{8}$ | 1 |
| Average Weight per Foot of Straight Link Chain | lbs. | .5 | .75 | 1.1 | 1.55 | 2 | 2.25 | 3.25 | 4.2 | 5.9 | 8 | 10 |

Prices quoted on application.

BRIGHT COIL CHAIN

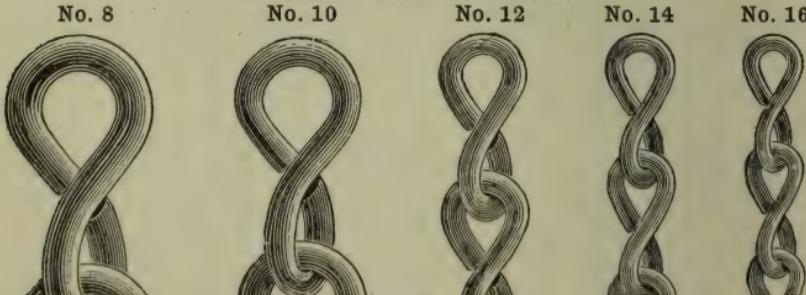


B2530

| | | | | | | | | |
|--------------------|------|------|------|------|------|------|------|-------|
| Number | 6 | 5 | 4 | 3 | 2 | 1 | 0 | 00 |
| Price per 100 ft.. | 6.50 | 6.50 | 6.60 | 6.80 | 7.20 | 7.80 | 8.80 | 10.00 |

Packed 100 feet in a box.

SINGLE JACK CHAIN



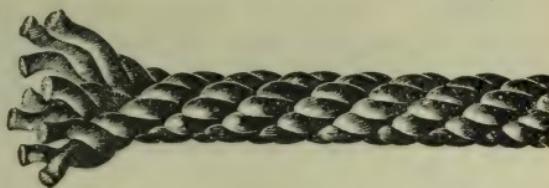
B2531

| | | | | | |
|------------------------------|------|------|------|------|-----|
| Number | 8 | 10 | 12 | 14 | 16 |
| Price, Iron..... per package | .95 | .80 | .44 | .40 | .30 |
| " Brass..... " | 5.25 | 3.50 | 2.05 | 1.35 | .86 |

Packed 12 yards in a package.

MANILA ROPE

B2535



HAWSER LAID DRILLING CABLE

B2536

MANILA ROPE

| Diam.....Inches | $\frac{7}{16}$ and Larger | $\frac{3}{8}$ | $\frac{5}{16}$ and $\frac{1}{4}$ | $\frac{3}{16}$ |
|-----------------|---------------------------|---------------|----------------------------------|----------------|
| Price.per pound | Base Price | Advance .00½ | Advance .01 | Advance .01½ |

Manila Rope is put up in coils of 1200 feet, or half coils of 600 feet. Rope cut to special length when required.

Rope cut to order cannot be returned.

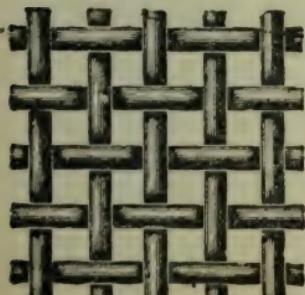
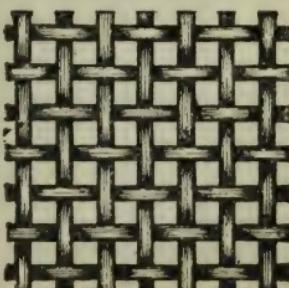
MANILA ROPE FOR WELL DRILLING

| | | |
|------------------------------------|-----------------------------|----------------|
| Bull Ropes..... | 2, 2½, 2¼, 2⅓, 2¾, 3 inch | Special Prices |
| Drilling Cables (Hawser Laid)..... | 1½, 1¾, 1¾, 2, 2⅓, 2¼, 2½ " | |
| Sand Pump Lines " | ½, ¾, ¾, ¾, 1, 1½ " | |
| Sucker Rod Lines " | 1¼, 1½, 1¾ " | |
| Tubing Lines " | 1¾, 1¾, 2, 2⅓, 2¼, 2½ " | |

An additional 1 cent a pound is charged when rope is cut to order.

APPROXIMATE WEIGHT OF ROPE, PER FOOT

| Size | inches | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{7}{8}$ | 1 | $1\frac{1}{8}$ | $1\frac{1}{4}$ | $1\frac{1}{2}$ | $1\frac{5}{8}$ | $1\frac{3}{4}$ | $1\frac{7}{8}$ | 2 | $2\frac{1}{8}$ | $2\frac{1}{4}$ | $2\frac{1}{2}$ |
|---------------------------|--------|----------------|---------------|---------------|---------------|----------------|----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|----------------|
| Drilling Cables... pounds | | $\frac{1}{8}$ | $\frac{1}{5}$ | $\frac{1}{4}$ | $\frac{1}{3}$ | $\frac{5}{32}$ | $\frac{1}{2}$ | $\frac{3}{8}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{5}$ | $1\frac{1}{3}$ | $1\frac{5}{8}$ | $1\frac{1}{3}$ | $1\frac{9}{10}$ | $2\frac{1}{8}$ |
| Sand Pump Lines .. " | | $\frac{1}{8}$ | $\frac{1}{5}$ | $\frac{1}{4}$ | $\frac{1}{3}$ | $\frac{5}{32}$ | $\frac{1}{2}$ | $\frac{3}{8}$ | .. | .. | .. | .. | .. | .. | .. | .. |
| Ordinary Manila... " | | $\frac{3}{32}$ | $\frac{1}{6}$ | $\frac{1}{5}$ | $\frac{1}{4}$ | $\frac{5}{16}$ | $\frac{7}{16}$ | $\frac{15}{32}$ | $\frac{3}{4}$ | $\frac{7}{8}$ | 1 | $1\frac{1}{4}$ | $1\frac{5}{8}$ | $1\frac{1}{2}$ | $1\frac{1}{8}$ | $1\frac{1}{2}$ |

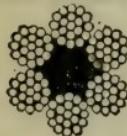
4 x 4 MESH, No. 12**6 x 6 MESH, No. 14****WIRE
CLOTH**

B2537

For Mining Use
or for
Smoke Stack, etc.

2 to 8 Mesh, Per sq. ft. \$.38
10 to 12 " " ".48

**ROUND
STRAND**
Made in
All Grades



(6 x 19). B2540



B2540 1/2

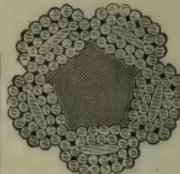
Hoisting Rope is made with 6 strands of 19 wires each also. Flattened strand is made 5 strands of 28 wires each, or 6 strands of 25 wires each. Flattened strand Ropes have 150 per cent more wearing surface than ordinary ropes.

Ropes with one extra wire strand (instead of hemp) in center, add to list 10 %.

WIRE HOISTING ROPE — With Hemp Center

PATENT FLATTENED STRAND

A. Leschens & Sons Rope Co., Sole Mfrs.



(5 x 28). B2541



(6 x 25). B2542

Price List B2540. 6 x 19 Wire Rope.

| Diameter in Inches | Average Weight of Rope per Foot | Trade Mark Registered | | Crucible Cast Steel | Plough Steel | Sweeds Iron | Minimum Size of Drums or Sheaves in Feet, for Crucible Steel | | | | | |
|-----------------------|------------------------------------|-----------------------|---------------|------------------------|-----------------|----------------|--|--------|--------|-------|------|-------|
| | | Hercules Steel | Special Steel | | | | | | | | | |
| 1/4 | .10 | ..... | 10 1/2 | .54 | 9 | .48 | 12 | .60 | 6 1/2 | .24 | * | 1/2 |
| 5/16 | .15 | ..... | 10 1/2 | .81 | 9 1/4 | .68 | 12 1/4 | .90 | 6 3/4 | .34 | | 3/8 |
| 3/8 | .22 | 14 1/2 | 1.4 | 11 | 1.15 | 9 1/2 | 1.00 | 12 1/2 | 1.31 | 7 | .50 | 1 |
| 7/16 | .30 | 15 | 2. | 11 1/2 | 1.56 | 10 | 1.36 | 13 | 1.77 | 7 1/2 | .68 | 1 1/4 |
| 1/2 | .39 | 16 1/2 | 2.5 | 12 1/2 | 2.02 | 11 | 1.76 | 14 | 2.28 | 8 | .88 | 1 1/2 |
| 9/16 | .50 | 20 | 3.4 | 14 | 2.54 | 12 | 2.20 | ..... | 10 | 1.10 | | 1 1/4 |
| 5/8 | .62 | 22 1/2 | 4. | 16 1/2 | 3.16 | 14 | 2.72 | 19 | 3.60 | 12 | 1.36 | 2 1/4 |
| 3/4 | .89 | 30 | 5.8 | 22 | 4.40 | 18 | 3.88 | 26 | 5.00 | 16 | 1.94 | 3 |
| 7/8 | 1.20 | 39 | 7.2 | 28 | 6.00 | 23 | 5.20 | 34 | 6.80 | 20 | 2.60 | 3 1/2 |
| 1 | 1.58 | 49 | 10. | 36 | 7.80 | 30 | 6.80 | 43 | 8.80 | 26 | 3.40 | 4 |
| 1 1/8 | 2.00 | 57 1/2 | 12. | 45 | 9.80 | 38 | 8.40 | 52 | 11 1/2 | 33 | 4.20 | 4 1/2 |
| 1 1/4 | 2.45 | 71 1/2 | 15.2 | 55 | 11.6 | 46 | 10.0 | 63 | 13.4 | 40 | 5.00 | 5 |
| 1 3/8 | 3.00 | 90 | 19.2 | 67 | 14.4 | 56 | 12.4 | 77 | 16.4 | 48 | 6.20 | 5 1/2 |
| 1 1/2 | 3.55 | 109 | 22.6 | 80 | 16.8 | 66 | 14.4 | 93 | 19.2 | 57 | 7.20 | 5 3/4 |

Price List B2541, 5 x 28, and B2542, 6 x 25, Wire Rope.

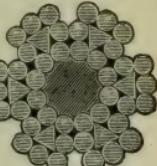
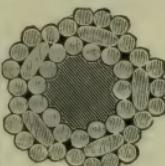
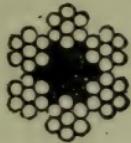
| | | | | | | | | | | | | |
|-------|------|--------|-------|--------|-------|--------|-------|-------|--------|-------|-------|-------|
| 3/8 | .20 | ..... | ..... | ..... | ..... | ..... | ..... | 9 1/2 | .5 | ..... | ..... | ..... |
| 1/2 | .38 | 20 1/4 | 2.7 | 17 1/2 | 2.22 | 14 1/2 | 1.9 | ..... | 10 1/2 | .8 | 1 1/2 | ..... |
| 9/16 | .47 | 25 | 3.8 | 19 1/2 | 2.8 | ..... | ..... | ..... | 13 | 1.0 | ..... | ..... |
| 5/8 | .57 | 28 | 4.5 | 22 1/2 | 3.4 | 18 1/4 | 3.0 | ..... | 15 1/2 | 1.2 | 2 1/4 | ..... |
| 3/4 | .83 | 37 1/2 | 6.4 | 30 | 4.9 | 24 | 4.2 | ..... | 21 | 1.8 | 3 | ..... |
| 7/8 | 1.20 | 49 | 8.1 | 38 | 6.6 | 30 | 5.8 | ..... | 26 | 2.6 | 3 1/2 | ..... |
| 1 | 1.58 | 60 | 11 2 | 48 | 8.6 | 39 1/2 | 7.6 | ..... | 34 | 3.4 | 4 | ..... |
| 1 1/8 | 2.00 | 71 | 13.4 | 59 | 10.8 | 50 | 9.4 | ..... | 43 | 4.2 | 4 1/2 | ..... |
| 1 1/4 | 2.50 | 89 | 16.8 | 70 | 12.8 | 59 1/2 | 11.2 | ..... | 52 | 5.6 | 5 | ..... |
| 1 3/8 | 3.00 | 112 | 21.2 | ..... | ..... | 73 | 13.8 | ..... | 62 1/2 | 6.8 | 5 1/2 | ..... |
| 1 1/2 | 3.65 | 137 | 24.8 | 05 | 18.6 | 86 | 16.2 | ..... | 74 | 8.0 | 5 3/4 | ..... |

The approximate breaking strain in tons for wire rope is about five times the allowable working strain as given above.

* The minimum diameter of sheave or drum, over which wire rope should be run as given above, is for crucible cast steel and special steel ropes, the other grades requiring considerably larger diameter drums.

WIRE HAULAGE AND TRANSMISSION ROPE

With Hemp Centre

ROUND STRAND
Made in all GradesPATENT FLATTENED STRAND
A. Leschens & Sons Rope Co., Sole Mfrs.

(6 x 7). B2543

B2543½

(5 x 9). B2544 (6 x 8). B2545

Haulage or Transmission or Standing Rope is made with 6 strands of 7 wires each, also Flattened Strand is made of 5 strands of 9 wires each or 6 of 8 wires.

Flattened Strand Ropes have 150 per cent more wearing surface than round.

Ropes made with one extra wire strand instead of the hemp centre, add 10%.

The wires used in making Haulage or Transmission Rope are much larger diameter than used in hoisting rope, consequently the ropes are stiffer and require sheaves 50 to 60 per cent larger diameter than the hoisting rope.

Price List B2543. 6 x 7 Wire Rope.

| Diameter in Inches | Average Weight per Foot | Trade Mark Registered A. LESCHENS & SONS ROPE CO., Sole Mfrs. | | | | Crucible Cast Steel | Plough Steel | Sweedes Iron | Allowable Work- ing strain in tons of 2,000 lbs. | Allowable Work- ing strain in tons of 2,000 lbs. | Allowable Work- ing strain in tons of 2,000 lbs. | | | | | | |
|-----------------------|----------------------------|---|--|----------------------------|--|------------------------|-----------------|-----------------|--|--|--|--|--|--|--|--|--|
| | | Hercules Steel | | Special Steel | | | | | | | | | | | | | |
| | | Price per Foot in Cents | Allowable Work- ing strain in tons of 2,000 lbs. | Price per Foot in Cents | Allowable Work- ing strain in tons of 2,000 lbs. | | | | | | | | | | | | |
| 9/32 | .124 | ... | ... | ... | ... | 4 | ... | ... | .56 | ... | ... | | | | | | |
| 5/16 | .15 | ... | ... | ... | ... | 4 1/2 | ... | ... | .68 | ... | ... | | | | | | |
| 3/8 | .22 | ... | ... | 6 | 1.11 | 5 1/2 | ... | ... | .96 | ... | ... | | | | | | |
| 1/2 | .30 | ... | ... | 7 1/4 | 1.50 | 6 1/2 | 1.32 | ... | ... | ... | ... | | | | | | |
| 1 1/2 | .39 | 13 | 2.3 | 9 1/2 | 1.94 | 7 1/2 | 1.68 | 11 | 2.20 | ... | ... | | | | | | |
| 1 1/8 | .50 | ... | ... | 11 1/2 | 2.46 | 9 | 2.12 | 14 | 2.80 | 6 1/2 | ... | | | | | | |
| 1 1/4 | .62 | 20 | 3.7 | 14 | 3.02 | 11 | 2.64 | 17 | 3.40 | 8 | 1.06 | | | | | | |
| 1 1/2 | .75 | ... | ... | ... | ... | 13 1/2 | 3.16 | ... | ... | 12 | 1.58 | | | | | | |
| 1 3/4 | .89 | 28 | 5.1 | 20 | 4.20 | 16 | 3.72 | 25 | 4.80 | 14 | 1.86 | | | | | | |
| 1 5/8 | 1.20 | 35 | 6.7 | 26 | 5.60 | 22 | 4.80 | 32 | 6.40 | 17 1/2 | 2.40 | | | | | | |
| 1 1/2 | 1.58 | 46 | 9.4 | 34 | 7.40 | 28 | 6.40 | 41 | 8.40 | 23 | 3.20 | | | | | | |
| 1 1/8 | 2.00 | 56 | 11.6 | 44 | 9.20 | 36 | 8.00 | 51 | 10.6 | 29 | 4.00 | | | | | | |
| 1 1/4 | 2.45 | 70 1/2 | 14.8 | 53 | 11.2 | 43 | 9.60 | 61 | 12.8 | 36 | 4.80 | | | | | | |
| 1 1/2 | 3.00 | ... | ... | ... | ... | 51 | 11.6 | ... | ... | 43 | 5.80 | | | | | | |
| 1 1/2 | 3.55 | ... | ... | ... | ... | 60 | 13.6 | ... | ... | 51 | 6.80 | | | | | | |

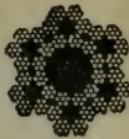
Price List B2544, 5 x 9, and B2545, 6 x 8, Wire Rope.

| | | | | | | | | | | | | |
|-------|------|--------|------|----|------|--------|------|-----|-----|---------|-----|-------|
| 9/32 | .25 | ... | ... | 11 | 1.2 | 7 | 1.0 | ... | ... | 8 1/4 | ... | 2 |
| 1/2 | .41 | 16 1/4 | 2.6 | 14 | 2.1 | 10 | 1.8 | ... | ... | .9 | ... | 2 1/2 |
| 5/8 | .73 | 25 | 4.2 | 18 | 3.3 | 14 | 2.8 | ... | ... | 1 2 1/2 | 1.4 | 3 1/2 |
| 3/4 | 1.00 | 35 | 6. | 27 | 4.6 | 20 1/2 | 4.0 | ... | ... | 17 1/2 | 2.0 | 4 1/2 |
| 7/8 | 1.35 | 44 | 7.6 | 35 | 6.2 | 27 1/2 | 5.4 | ... | ... | 22 | 2.7 | 5 |
| 1 | 1.80 | 58 | 10.6 | 45 | 8 | 35 | 7.2 | ... | ... | 29 | 3.6 | 5 3/4 |
| 1 1/8 | 2.30 | 70 | 12.8 | 54 | 10 | 45 | 9.0 | ... | ... | 36 1/2 | 4.5 | 6 1/4 |
| 1 1/4 | 2.80 | 88 | 16. | 68 | 12.4 | 54 | 10.8 | ... | ... | 45 | 5.4 | 7 1/4 |
| 1 1/2 | 3.30 | ... | ... | 80 | 14.6 | 64 | 12.8 | ... | ... | ... | ... | 8 |
| 1 1/2 | 4.40 | ... | ... | 93 | 17 | 75 | 15.0 | ... | ... | ... | ... | 8 1/2 |

For breaking strain, etc., see remarks bottom of preceding page.

† Table drum diameters is for Crucible Steel Rope. See bottom preceding page.

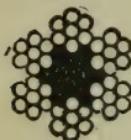
TILLER ROPE



B2546

| Diameter.....Inch. | $\frac{1}{4}$ | $\frac{5}{16}$ | $\frac{3}{8}$ | $\frac{7}{16}$ | $\frac{1}{2}$ | $\frac{9}{16}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{7}{8}$ | I |
|-------------------------|-------------------|-------------------|---------------|----------------|---------------|----------------|---------------|---------------|---------------|------|
| Iron.....per foot | .07 $\frac{1}{2}$ | .08 | .09 | .10 | .11 | .14 | .17 | .22 | .27 | .33 |
| Cast Steel....." | .11 | .12 $\frac{1}{2}$ | .14 | .15 | .17 | .19 | .24 | .30 | .36 | .43 |
| Avg'e Wt. per ft....lb. | 0.07 | 0.11 | 0.16 | 0.21 | 0.28 | 0.35 | 0.43 | 0.62 | 0.84 | 1.10 |

Tiller ropes are used for steering ropes, hand ropes on elevators, and in any place where a smooth and extremely flexible rope is required. They are composed of 252 wires, and are made up of a hemp core, around which are twisted six ropes, each of which consists of six strands, inclosing a hemp center. They will pass around very small pulleys and sheaves. The wires are necessarily very fine, and should not be subjected to scraping of any kind or much frictional wear.



B2547

GALVANIZED IRON WIRE ROPE

For Ships' Rigging, Guys for Derricks, Etc.

Made with six strands of 7 usually, or of 12 wires, laid around a hemp center.

When made with wire center add 10 per cent. to price per foot.
Galvanized rope must not be used as a running rope.

| Approximate Diameter in Inches | Circumference in Inches | Estimated Weight Per Foot, Hemp Center | 7 Wires | | 12 Wires | | Approximate Diameter in Inches | Circumference in Inches | Estimated Weight Per Foot, Hemp Center | 7 Wires | |
|--------------------------------------|----------------------------|---|--|--|--|--|--------------------------------------|----------------------------|---|--|--|
| | | | Coarse Laid. Price Per Foot, Cents | Fine Laid. Price Per Foot, Cents | Coarse Laid. Price Per Foot, Cents | Fine Laid. Price Per Foot, Cents | | | | Coarse Laid. Price Per Foot, Cents | Fine Laid. Price Per Foot, Cents |
| 1 $\frac{1}{2}$ | 4 $\frac{3}{4}$ | 3.60 | 35 | 37 | 32 | 29 | $\frac{5}{8}$ | 2 | 0.64 | 8 | 5.8 |
| 1 $\frac{7}{16}$ | 4 $\frac{1}{2}$ | 3.25 | 31 | 33 | 29 | 26 | $\frac{9}{16}$ | 1 $\frac{3}{4}$ | 0.49 | 7 | 4.4 |
| 1 $\frac{3}{8}$ | 4 $\frac{1}{4}$ | 2.90 | 27 | 29 | 25 | 23 | $\frac{7}{8}$ | 1 $\frac{1}{2}$ | 0.36 | 6 | 3.2 |
| 1 $\frac{1}{4}$ | 4 | 2.55 | 24 | 25 | 23 | 20 | $\frac{7}{16}$ | 1 $\frac{1}{4}$ | 0.25 | 5 | 2.3 |
| 1 $\frac{1}{16}$ | 3 $\frac{3}{4}$ | 2.25 | 21 | 22 | 20 | 18 | $\frac{3}{8}$ | 1 $\frac{1}{8}$ | 0.20 | 4 | 1.8 |
| 1 $\frac{1}{8}$ | 3 $\frac{1}{2}$ | 1.95 | 18 | 19 | 18 | 16 | $\frac{5}{16}$ | 1 | 0.16 | 3 $\frac{1}{2}$ | 1.4 |
| 1 $\frac{1}{16}$ | 3 $\frac{1}{4}$ | 1.70 | 16 | 17 | 15 | 13 | 5 strands | 7 Wires each. | 0.123 | 3 | 1.1 |
| 1 | 3 | 1.44 | 14 | 15 | 13 | 11 | $\frac{9}{32}$ | $\frac{7}{8}$ | 0.090 | 2 $\frac{1}{2}$ | 0.81 |
| $\frac{7}{8}$ | 2 $\frac{3}{4}$ | 1.21 | 12 | .. | 9 | 7 | $\frac{1}{4}$ | $\frac{3}{4}$ | 0.063 | 2 $\frac{1}{4}$ | 0.56 |
| $\frac{13}{16}$ | 2 $\frac{1}{2}$ | 1.00 | 10 | .. | .. | .. | $\frac{3}{32}$ | $\frac{5}{8}$ | 0.040 | 2 | 0.36 |
| $\frac{3}{4}$ | 2 $\frac{1}{4}$ | 0.81 | 9 | .. | 7.3 | $\frac{3}{16}$ | $\frac{1}{2}$ | | | | |

GALVANIZED STEEL WIRE STRAND

For Smoke Stacks, Guys, Signal Strand, Trolley Span Wire, Etc.

Seven Wires Twisted Together



B2548

| Diameter.....inch | $\frac{3}{2}$ | $\frac{1}{8}$ | $\frac{5}{2}$ | $\frac{3}{5}$ | $\frac{7}{3}$ | $\frac{1}{4}$ | $\frac{5}{16}$ | $\frac{3}{8}$ | $\frac{7}{8}$ | $\frac{1}{2}$ |
|------------------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|
| Price per 1000 ft.... | .80 | 1.00 | 1.15 | 1.25 | 1.50 | 1.75 | 2.25 | 2.75 | 3.75 | 4.50 |
| Weight " " " " " | 2 | 3.2 | 5.5 | 7.5 | 9.5 | 12.5 | 21.0 | 29.5 | 41.5 | 51.0 |
| A'prox. Br'k. Strain " | 400 | 500 | 900 | 1,400 | 1,800 | 2,300 | 3,800 | 5,000 | 6,500 | 8,500 |

Intermediate sizes take next higher list.

CLOSED SOCKETS



B2550

WIRE ROPE
ATTACHMENTS

HOOK AND THIMBLE



B2552

GALV. THIMBLE



B2554

OPEN SOCKETS



B2551

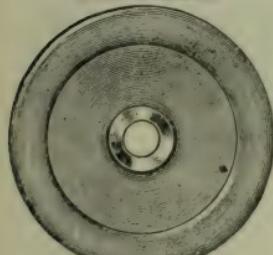
SWIVEL HOOK
AND SOCKET

B2553

HOOK AND EYE TURN BUCKLE



B2555

IRON SHEAVES
Iron Bushed

B2559

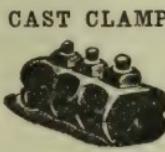
CROSBY CLIP

ATLAS B2556
Wrought Clip

B2557

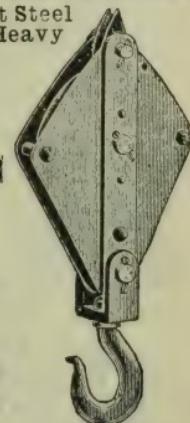


B2558



CAST CLAMP

WIRE ROPE BLOCKS

Wrought Steel
Extra Heavy

B2560

B2560. Can furnish Single, Double, Triple, or Snatch.

| Diam. Rope...in. | $\frac{1}{4}$ | $\frac{5}{16}$ | $\frac{3}{8}$ | $\frac{7}{16}$ | $\frac{1}{2}$ | $\frac{9}{16}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{7}{8}$ | 1 | $1\frac{1}{8}$ | $1\frac{1}{4}$ | $1\frac{3}{8}$ | $1\frac{1}{2}$ | |
|--|---------------|----------------|---------------|----------------|----------------|----------------|---------------|----------------|----------------|-------|-----------------|-----------------|-----------------|-----------------|------|
| B2550—Loose... | .70 | .70 | .85 | .85 | 1.10 | 1.10 | 1.35 | 1.65 | 1.85 | 2.40 | 3.30 | 4.50 | 6.00 | 6.80 | |
| Attached | 1.60 | 1.60 | 1.85 | 2.00 | 2.25 | 2.35 | 2.65 | 3.15 | 3.85 | 4.65 | 6.15 | 8.00 | 10.25 | 11.80 | |
| B2551—Loose... | .85 | .85 | 1.00 | 1.00 | 1.35 | 1.35 | 1.65 | 2.10 | 2.50 | 3.15 | 4.50 | 6.10 | .... | .... |  |
| Attached | 1.75 | 1.75 | 2.00 | 2.15 | 2.50 | 2.60 | 2.95 | 3.60 | 4.50 | 5.40 | 7.35 | 9.60 | .... | .... |  |
| B2553—Loose... | .... | .... | 5.40 | .... | 7.10 | .... | 9.20 | 10.50 | 14.00 | 16.70 | 24.00 | .... | .... | .... |  |
| Attached | .... | .... | 6.40 | .... | 8.25 | .... | 10.50 | 12.00 | 16.00 | 18.95 | 26.85 | .... | .... | .... |  |
| B2552—Loose... | .65 | .65 | .70 | .75 | .80 | 1.10 | 1.40 | 1.85 | 2.90 | 3.75 | 4.40 | 4.60 | 5.40 | 7.00 | |
| *Attached | 1.75 | 1.75 | 1.85 | 1.95 | 2.05 | 2.40 | 2.85 | 3.75 | 5.35 | 6.70 | 8.15 | 9.20 | 11.15 | 13.50 | |
| B2554—Loose... | .08 | .08 | .09 | .10 | .11 | .12 | .13 | .15 | .16 | .20 | .28 | .33 | .42 | .50 | |
| Spliced on | 1.10 | 1.10 | 1.15 | 1.20 | 1.25 | 1.30 | 1.55 | 2.00 | 2.55 | 3.00 | 3.90 | 4.70 | 5.75 | 6.50 | |
| B2556—"Crosby" | .25 | .25 | .25 | .... | .30 | .... | .35 | .40 | .45 | .50 | .50 | .50 | .55 | .60 | |
| B2557—"Atlas". | .25 | .25 | .25 | .... | .30 | .... | .35 | .40 | .45 | .50 | .60 | .65 | .... | .75 | |
| B2558—Clamps, Double Barrel, with Bolts | .... | .... | .45 | .... | .60 | .... | .90 | 1.05 | 1.30 | 1.75 | 1.90 | 2.50 | .... | 3.80 | |
| B2555..... | 1 | .85 | .90 | 1.10 | 1.25 | 1.55 | | 2.00 | 2.75 | 3.50 | 4.25 | 5.25 | 6.25 | 7.50 | 9.00 |
| Leng h Thread...inches | (| $3\frac{3}{4}$ | 4 | $4\frac{3}{4}$ | $5\frac{1}{4}$ | 6 | | $7\frac{1}{2}$ | $9\frac{1}{4}$ | 11 | $12\frac{1}{4}$ | $13\frac{1}{2}$ | $14\frac{1}{4}$ | $15\frac{1}{4}$ | 16 |

| | | | | | | | | |
|---------------------------------------|--------|------|------|------|------|------|------|------|
| B2559—Diameter..... | inches | 6 | 8 | 10 | 12 | 14 | 16 | 18 |
| Sheaves, Plain Bore..... | | 1.00 | 1.25 | 1.60 | 2.00 | 2.50 | 3.00 | 4.00 |
| Self Lubricating, Phos. Bronze Bushed | | 2.50 | 3.00 | 3.50 | 4.00 | 4.50 | 5.00 | 6.00 |

B2560—Blocks: Single, 12 in., \$20.00; 14 in., \$22.00; 16 in., \$32.00; Double, is extra \$7.00; Triple, extra \$17.00, either size. Diameter is at bottom of groove. Other patterns of Blocks, and Sheaves, and Rubber Filled Sheaves quoted on application.

* For Iron Rope, list is lower (approximately *30%) (approximately +10%).

D HANDLE SHOVELS AND SPADES**SOCKET OR HOLLOW
BACK COAL****SHOVEL**
Square Point

B2561

SCOOP

B2562

**STRAPPED
STEEL
SPADE**

D HANDLE

D HANDLE

Square Point

Round Point



B2563

**STRAPPED
STEEL
SHOVELS**

D HANDLE

D HANDLE

Round Point



B2564



B2565

**COAL
AND COKE
FORKS****SOLID STEEL
SHANKS**

Capped Ferrules



B2566

LONG HANDLE SHOVELS AND SPADE

Square Point Round Point

Spade



B2567



B2568



B2569

Prices quoted on application.

State quantity wanted, purpose to be used for, and dimensions of blade desired; also whether a cheap, medium, or high grade is wanted.

PICKS**R. R. ADZE EYE**

B2570

TAMPING ADZE EYE

B2571

| | | |
|--------------------|-------|-------|
| 6 to 7 Pounds..... | dozen | 13.50 |
| 7 " 8 " | " | 14.50 |
| 8 " 9 " | " | 16.50 |

| | | |
|--------------------|-------|-------|
| 7 to 8 Pounds..... | dozen | 18.00 |
| 8 " 9 " | " | 19.00 |

CONTRACTORS' ADZE EYE

B2572

SHORT EAR COAL CUTTING

B2573

| Pounds..... | 8 | 8½ | 9 | Pounds.. | 2 | 2½ | 3 | 3½ | 4 | 4½ |
|-------------|-------|-------|-------|----------|------|------|------|-------|-------|-------|
| Dozen..... | 19.00 | 20.00 | 21.00 | Dozen... | 8.50 | 9.00 | 9.50 | 10.00 | 10.50 | 11.00 |

HANDLES

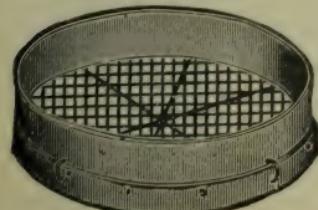
| | | | | |
|--------------------------------------|--|----------------------|--------------|--------------|
| Pick or Mattock, 36 inch..... | | Extra Quality | No. 1 | No. 2 |
| Per Dozen..... | | 4.50 | 3.00 | 2.25 |

| | | | |
|--------------------------------|--|------------------|-------------|
| Coal Pick Handles | | per dozen | 1.75 |
|--------------------------------|--|------------------|-------------|

| | | | | | | | |
|-----------------------------|---------------|-----------|--------------|--------------|--------------|-----------|-----------|
| Sledge Handles | inches | 24 | 26-28 | 30-32 | 34-36 | 38 | 40 |
| Per Dozen | | 1.45 | 1.90 | 2.10 | 2.50 | 2.65 | 2.85 |

| | | | | | | |
|--------------------------------------|--|-----------------------------|---------------|---------------|---------------|---------------|
| Machinist Hammer Handles..... | | 11 in. to 15 in. | 16 in. | 18 in. | 20 in. | 22 in. |
| Per Dozen..... | | .70 | .80 | .90 | 1.05 | 1.15 |

Hatchet Handles, 12 and 13 inch, 70c per dozen; 14 and 15 inch, 75c per dozen.

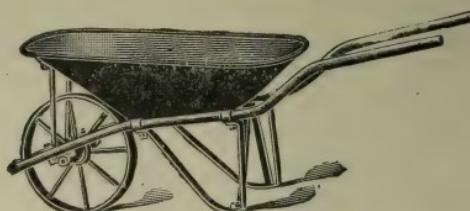


B2574

MOULDERS' RIDDLE

| | | |
|---------------------------|------------------|-----------------|
| Number | 2 to 16 | 18 to 24 |
| Diameter..... | inches | 18 |
| Steel Wire..... | per dozen | 8.00 |
| Galvanized Wire... | " | 12.00 |

TUBULAR STEEL WHEELBARROWS

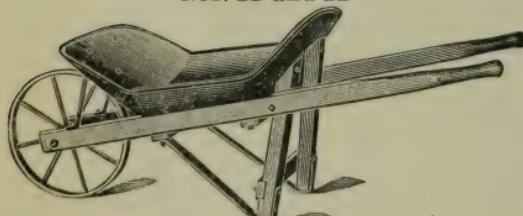


B2578

| No. | Gauge Steel in Tray | SIZE OF TOP, INCH | | Capacity Cubic Ft. | Weight Pounds | Price Each |
|---|---------------------------|-------------------|--------|----------------------------|----------------------------|------------------|
| | | Long | Wide | | | |
| Dirt and M'ing { 2A 13A 14A | 15 | 32 in. | 29 in. | 3 | 70 | 12.00 |
| | 15 | 32 " | 29 " | 5 | 75 | 15.00 |
| | 12 | 32 " | 29 " | 3 | 90 | 15.00 |
| No. | Gauge Steel in Tray | SIZE AT TOP, INCH | | Capacity Cubic Feet. | Capacity Coal Pounds | Weight Pounds |
| | | Long | Wide | | | |
| Coal { 15A 16A 17A | 14 | 36 | 29 | 4½ | 270 | 86 |
| | 12 | 36 | 29 | 4½ | 270 | 95 |
| | 10 | 36 | 29 | 4½ | 270 | 110 |
| No. | Gauge Steel in Tray | SIZE OF TOP, INCH | | CAPCTY., POUNDS | | Price Each |
| | | Long | Wide | Coke | Coal | |
| Coke { 18A 18½A 19A | 14 | 42 | 33 | 275 | 430 | 100 |
| | 16 | 42 | 33 | 275 | 430 | 90 |
| | 16 | 49 | 40 | 400 | .... | 100 |

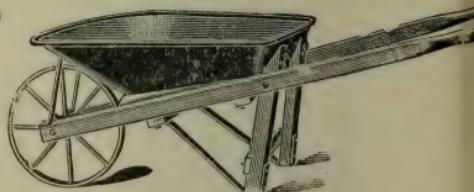
WHEELBARROWS, WITH WIRED EDGE STEEL TRAY
AND HEAVY STEEL WHEELS

Nos. 1B and 2B



B2579

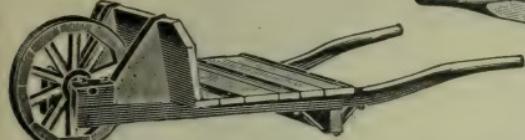
Nos. 3C, 4C, and 5C



B2580

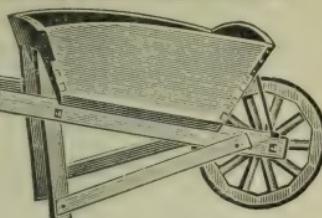
| No. | Diameter of Wheel Inches | Gauge of Steel in Tray | SIZE AT TOP, INCHES | | Capacity Cubic Feet | Weight Pounds | Price Each |
|-----|--------------------------------|------------------------------|---------------------|-------|---------------------------|------------------|---------------|
| | | | Length | Width | | | |
| 1B | 17 | 16 | 33 | x | 33 | .. | 5.00 |
| 2B | 17 | 14 | 33 | x | 33 | .. | 5.50 |
| 3C | 17 | 16 | 32 | x | 29 | 3 | 5.50 |
| 4C | 17 | 14 | 32 | x | 29 | 5 | 6.00 |
| 5C | 17 | 11 | 29 | x | 36 | 4½ | 6.50 |

5C is 8½ inches deep at front and 6 inches at back.

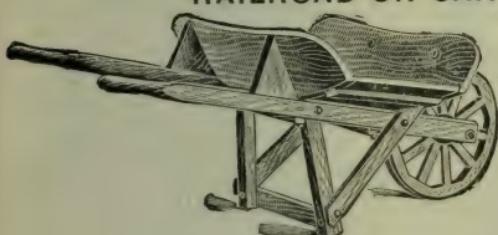
**BENT HANDLE,
WOOD WHEEL**

B2581

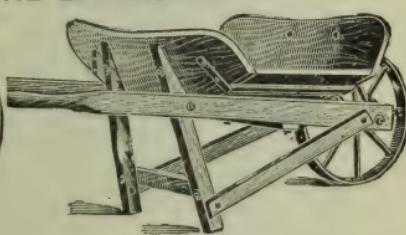
Prices, dimensions, and description on application.
Can be furnished with Patent Steel Spoke Wheel on special order.

BOLTED MORTAR BARROW

B2582

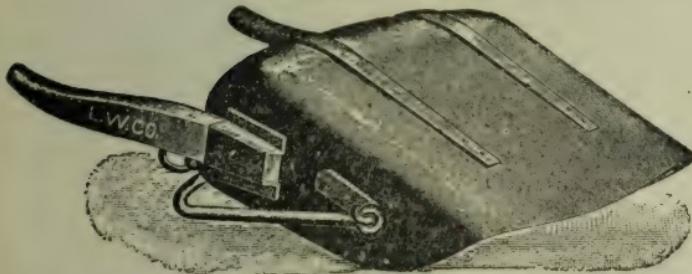
RAILROAD OR CANAL BARROWS

B2583



B2584

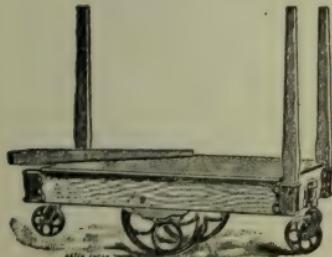
Prices and dimensions quoted on application.

**SOLID
STEEL
SCRAPER**

B2585

With Runners

Made with or without Runners. Made in three sizes. Capacity, three, five, and seven cubic feet. Prices and dimensions on application.

**DOUBLE END TILTING
TRUCK**

B2586

**GROCERY OR MERCHANDISE
TRUCK**

B2587

See Price List and description bottom of following page.

WAREHOUSE TRUCKS

BAG TRUCK



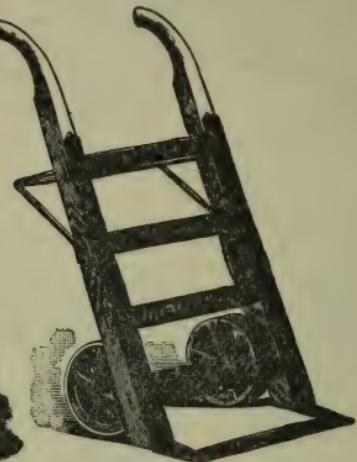
B2583

Iron Wheels, 4.50: Rubber

Tired, 8.00

Length, 42 in.; Wheels, 6 in.

FULL IRONED



B2589

BARREL TRUCK



B2590

WAREHOUSE TRUCKS

| Length Handles Inches. | Width Truck Inches | Diam. Wheels Inches | FULL IRONED | | *HALF IRONED | | BARREL TRUCKS, FULL IRONED | |
|------------------------------|--------------------------|---------------------------|--------------------|----------------|--------------------|----------------|-------------------------------|----------------|
| | | | Rub'ered Wheels | Iron Wheels | Rub'ered Wheels | Iron Wheels | Rub'ered Wheels | Iron Wheels |
| 48 | 19 | 7½ | 16.00 | 8.00 | 15.00 | 7.00 | 17.00 | 9.00 |
| 52 | 20 | 8½ | 19.00 | 10.50 | 18.50 | 9.00 | 20.00 | 11.00 |
| 56 | 22 | 9½ | 28.00 | 15.00 | 24.00 | 13.00 | 28.50 | 16.00 |
| 62 | 24 | 10½ | 34.50 | 18.50 | 32.00 | 16.00 | .... | .... |

†The 48-inch Warehouse Trucks have only three cross bars.

*The Half Ironed Trucks have no iron on the cross bars, and the handles are ironed only part of the length.

B2586

(See illustrations bottom of preceding page.)

B2587

| No. | Width Truck Feet | B'tw'n Stakes Feet | Diam. Wheels Inches | Diam. Casters Inches | Per Doz. |
|-----|------------------------|--------------------------|---------------------------|----------------------------|-------------|
| 1 | 2 | 4 | 12 | 7 | 130.00 |
| 2 | 2 | 4 | 16 | 7 | 144.00 |
| 3 | 3 | 5 | 12 | 7 | 154.00 |
| 4 | 3 | 5 | 16 | 7 | 168.00 |

Made of hardwood for heavy work.

If with Wooden Cross Bar Racks on each end, stationary or adjustable, add to list \$36.00 dozen. Also made with iron racks at special price.

Trucks with Rubber Tired Wheels and Casters quoted on application.

| *Plat- form Feet | Weight Lbs. | Each | *Plat- form Feet | Weight Lbs. | Each |
|------------------------|----------------|-------|------------------------|----------------|-------|
| 2 x 3 | 125 | 24.00 | 3 x 4 | 173 | 27.00 |
| 2 x 4 | 152 | 25.00 | 2½ x 5 | 175 | 27.00 |
| 2½ x 4 | 172 | 26.10 | 3 x 5 | 192 | 29.25 |
| 2 x 5 | 161 | 26.10 | .... | .... | .... |

Wheels are 2-inch and Casters 1½-inch tread. Capacity 1200 lbs.

Add to list if with Round Rubber Tires on Grooved Wheels and Casters \$8.00, or Patent Rubber Band Tires \$12.00.

*Add 4 inches for extreme length, longer trucks on application.

No. 0 to 8 have 12-inch wheels and 6-inch casters; height 14 inches. Trucks with 18-inch wheels and 9-inch casters, 3000 lbs. capacity, quoted on application.

WOUND MILL BROOMS



B2600

CAPITAL BROOMS



B2601

| | PER DOZEN | |
|----------------------|----------------------|-----------------|
| | All Broom Corn | Rattan Mixed |
| 30 lb. Light, 4-seam | 5.50 | 6.00 |
| 35-lb. Heavy, 4- " | 6.00 | 6.50 |
| 40-lb. Ex. Hea, 5- " | 7.00 | 7.50 |
| *33-lb. Medium..... | 5.50 | 6.00 |
| *36-lb. Heavy..... | 6.00 | 6.50 |

*Metal core and instead of the two upper seams a steel band is riveted on.

| | PER DOZEN | |
|-------------------------|----------------------|-----------------|
| | All Broom Corn | Rattan Mixed |
| No. 3 (equals 33-lb.) | 4.50 | 5.00 |
| No. 4 (equals 36-lb.) | 5.00 | 5.50 |
| No. 5 (equals 40-lb.) | 5.50 | 6.00 |
| Special (equals 42-lb.) | 6.50 | 8.50 |

Nos. 3 and 4 trimmed 16 inches long.
No. 5 and Special trimmed 17 inches long.

The Capital pattern Broom varies slightly in weight from the rating of Wound Brooms on account of the material trimmed away at the shoulder.

SNOW AND SWITCH BROOMS — B2602

For Steam Railways

Similar in appearance to the Capital B2601, except instead of two rows of stitching has one very heavy row of stitching.

All Rattan.....per dozen 6.00 All Bamboo.....per dozen 5.50

Can be furnished with Chisel attached to end of Handle, at special price.

**UPRIGHT
CURVE
BROOMS****B2603**

This is a first-class wire broom, made in the usual manner, and we furnish them complete with handles. Being upright it is used in the same manner as our Track Bamboo. The block is 11 in., $1\frac{1}{4}$ in. wide and the wire projects 5 inches.

With Chisel Handle,
per doz... 11.00

With Plain Handle,
per doz... 9.50

**PUSH BROOMS****B2604**

Illustrated at bottom of page.

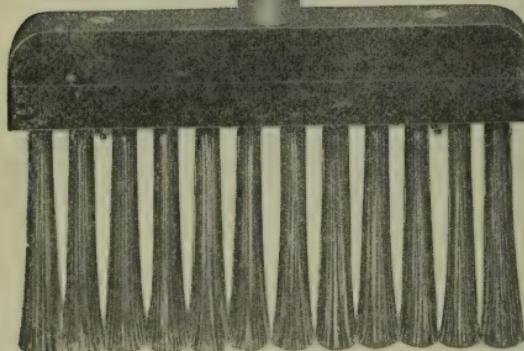
| Rows Wide | Block Inches Long | Bass Per Doz. | Rattan Per Doz. | Bamboo Per Doz. |
|-----------|-------------------|---------------|-----------------|-----------------|
| 4 | 14 | 8.00 | 7.00 | 6.00 |
| 4 | 16 | 9.00 | 8.50 | 7.00 |
| 5 | 14 | 10.00 | 8.00 | 7.00 |
| 5 | 16 | 11.50 | 10.00 | 8.00 |

Material projecting 6 inches from face of block.

FLAT STEEL WIRE BROOMS**B2605**

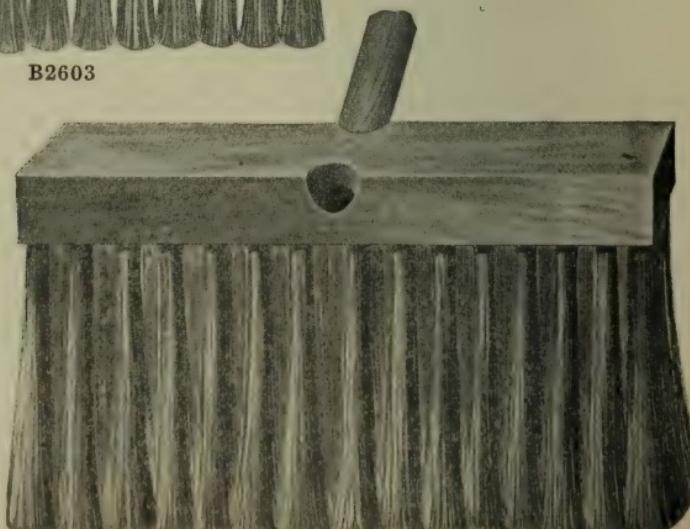
Similar to B2604. For Street or Stable use.

| Length Inches | Rows Wide | Inch Projection | Per Dozen |
|---------------|-----------|-----------------|-----------|
| 12 | 4 | 5 | 8.00 |
| 14 | 4 | 5 | 9.00 |
| 16 | 4 | 5 | 10.00 |

**B2603****EXTRA STIFF
ROOFERS OR PAVERS
BROOM**

Similar to B2604.

| | | |
|---------------------------|---------------------|-------|
| 4 rows wide, 14-in. block | Price, Per Doz..... | 10.00 |
|---------------------------|---------------------|-------|

**B2604**

Handles,
if
wanted,
are
extra.
60c.
per
dozen

MOULDER'S BRUSH**Number 6 soft—**

Is in block 9 inches long, 1½ inches wide. 14 rows long, 3 rows wide with large sets, very full and bushy.

Price.....per dozen 6.00

Number 7 soft—

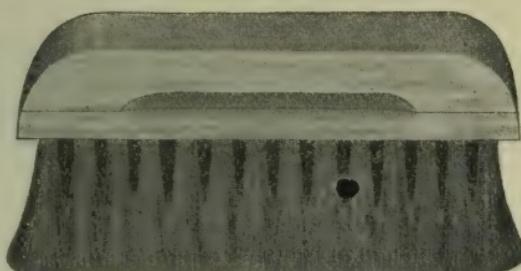
Same length block, the same rows in length but is four rows wide, making it extra heavy.

Price.....per dozen 7.00

Number 10 hard—

Is in block 9 x 2¾ inches, has 21 rows in length and 7 in the width, good quality stiff bristles.

Price.....per dozen 7.00



B2606

HERCULES STEEL SCOOP

B2610

| | |
|-----------------------------|------|
| Bushel Scoop, net..... | 3.00 |
| Half-bushel Scoop, net..... | 2.50 |

It is made of fine sheet steel, light in weight, and will outwear several of the ordinary iron scoops.

CHAMPION FLOUR SCOOP

B2611

| Size, Inches | Tin—Net Price | Steel—Net Price | Galvanized Steel—Net Price |
|--------------|---------------|-----------------|----------------------------|
| 8 | .60 | .75 | .85 |
| 10 | .65 | .85 | 1.00 |
| 12 | .75 | 1.00 | 1.10 |
| 14 | 1.00 | 1.25 | 1.25 |

The Champion is made of sheet steel, or XXXX tin plate, with handle of wrought iron. The handle being placed in the center instead of at the end distributes the weight evenly, making the handling of material easier and quicker.

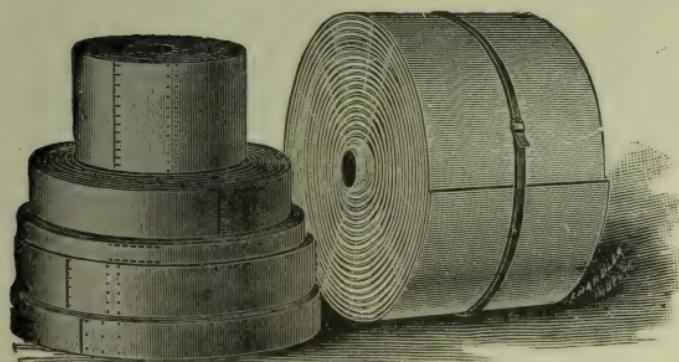
**"MOSHER" BAG HOLDER**

| | |
|-------------|------|
| Price | 5.00 |
|-------------|------|

This machine is a great success. It is adapted to all sizes of bags, from a 48-lb. flour sack to a 6-bushel gunny bag. One man can take off and put on from 15 to 20 bags a minute. Does not tear the bag. Is well made; malleable iron jaws; wrought iron pipe standards; steel spring, and only weighs 20 lbs. It pays for itself in a few days' time.

B2615

LEATHER BELTING



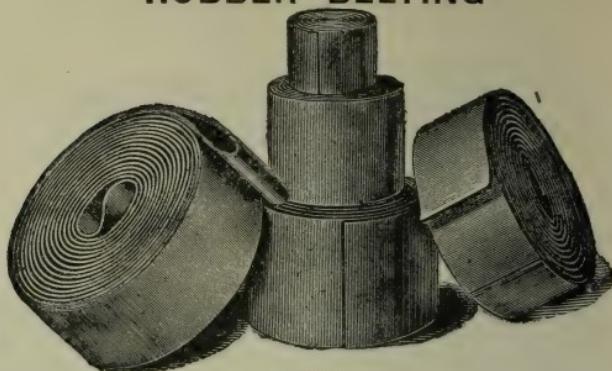
B3000

ADOPTED NOVEMBER 21, 1906.

| Width Inches | Price per Foot | Width Inches | Price per Foot | Width Inches | Price per Foot | Width Inches | Price per Foot |
|-----------------|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|-------------------|
| $\frac{1}{2}$ | .12 | 4 | .96 | 17 | 4.08 | 36 | 8.64 |
| $\frac{5}{8}$ | .15 | $4\frac{1}{2}$ | 1.08 | 18 | 4.32 | 38 | 9.12 |
| $\frac{3}{4}$ | .18 | 5 | 1.20 | 19 | 4.56 | 40 | 9.60 |
| $\frac{7}{8}$ | .21 | $5\frac{1}{2}$ | 1.32 | 20 | 4.80 | 42 | 10.08 |
| 1 | .24 | 6 | 1.44 | 21 | 5.04 | 44 | 10.56 |
| $1\frac{1}{4}$ | .30 | $6\frac{1}{2}$ | 1.56 | 22 | 5.28 | 46 | 11.04 |
| $1\frac{1}{2}$ | .36 | 7 | 1.68 | 23 | 5.52 | 48 | 11.52 |
| $1\frac{3}{4}$ | .42 | 8 | 1.92 | 24 | 5.76 | 50 | 12.00 |
| 2 | .48 | 9 | 2.16 | 25 | 6.00 | 52 | 12.48 |
| $2\frac{1}{4}$ | .54 | 10 | 2.40 | 26 | 6.24 | 54 | 12.96 |
| $2\frac{1}{2}$ | .60 | 11 | 2.64 | 27 | 6.48 | 56 | 13.44 |
| $2\frac{3}{4}$ | .66 | 12 | 2.88 | 28 | 6.72 | 60 | 14.40 |
| 3 | .72 | 13 | 3.12 | 29 | 6.96 | ... | ..... |
| $3\frac{1}{4}$ | .78 | 14 | 3.36 | 30 | 7.20 | ... | ..... |
| $3\frac{1}{2}$ | .84 | 15 | 3.60 | 32 | 7.68 | ... | ..... |
| $3\frac{3}{4}$ | .90 | 16 | 3.84 | 34 | 8.16 | ... | ..... |

Double Belts Twice the Price of Single. Extra Heavy Belts, Extra Prices.

| ROUND BELTS—TWISTED. B3002 | | | | ROUND BELTS—SOLID. B3003 | |
|----------------------------|----------|---------------------|----------|--------------------------|----------|
| Diam. | Per Foot | Diam. | Per Foot | Diam. | Per Foot |
| $\frac{1}{8}$ -inch | .08 | $\frac{1}{2}$ -inch | .38 | $\frac{1}{8}$ -inch | .07 |
| $\frac{3}{16}$ " | .12 | $\frac{5}{16}$ " | .48 | $\frac{3}{16}$ " | .09 |
| $\frac{1}{4}$ " | .17 | $\frac{3}{8}$ " | .60 | $\frac{1}{4}$ " | .14 |
| $\frac{5}{16}$ " | .22 | $\frac{7}{8}$ " | .80 | $\frac{5}{16}$ " | .18 |
| $\frac{3}{8}$ " | .27 | 1 " | .96 | $\frac{3}{8}$ " | .24 |

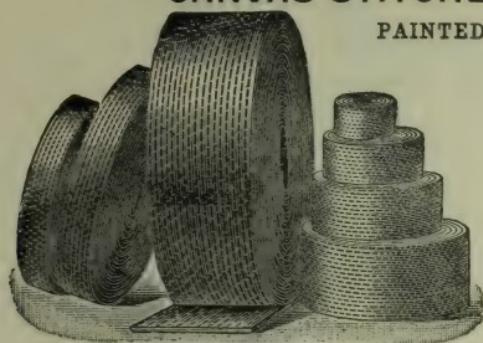
RUBBER BELTING

B3005

| Inch | 2-Ply Per Foot | 3-Ply Per Foot | 4-Ply Per Foot | 5-Ply Per Foot | 6-Ply Per Foot |
|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 1 | .07 | .09 | .... | .... | .... |
| 1 $\frac{1}{4}$ | .09 | .11 | .... | .... | .... |
| 1 $\frac{1}{2}$ | .11 | .13 | .... | .... | .... |
| 1 $\frac{3}{4}$ | .13 | .15 | .... | .... | .... |
| 2 | .15 | .17 | .21 | .... | .... |
| 2 $\frac{1}{2}$ | .18 | .22 | .26 | .... | .... |
| 3 | .22 | .26 | .31 | .... | .... |
| 3 $\frac{1}{2}$ | .26 | .30 | .37 | .... | .... |
| 4 | .30 | .34 | .42 | .52 | .... |
| 4 $\frac{1}{2}$ | .33 | .39 | .47 | .58 | .... |
| 5 | .... | .43 | .52 | .65 | .... |
| 6 | .... | .52 | .62 | .77 | .93 |
| 7 | .... | .60 | .73 | .91 | 1.09 |
| 8 | .... | .70 | .84 | 1.05 | 1.26 |
| 9 | .... | .... | .95 | 1.18 | 1.42 |
| 10 | .... | .... | 1.07 | 1.33 | 1.60 |
| 11 | .... | .... | 1.18 | 1.47 | 1.77 |
| 12 | .... | .... | 1.30 | 1.62 | 1.95 |
| 13 | .... | .... | 1.42 | 1.77 | 2.13 |
| 14 | .... | .... | 1.54 | 1.92 | 2.31 |
| 15 | .... | .... | 1.66 | 2.07 | 2.49 |
| 16 | .... | .... | 1.78 | 2.22 | 2.67 |
| 18 | .... | .... | 2.02 | 2.52 | 3.03 |
| 20 | .... | .... | 2.26 | 2.82 | 3.39 |
| 22 | .... | .... | 2.52 | 3.15 | 3.78 |
| 24 | .... | .... | 2.80 | 3.50 | 4.20 |
| 26 | .... | .... | 3.08 | 3.85 | 4.62 |
| 28 | .... | .... | 3.36 | 4.20 | 5.04 |
| 30 | .... | .... | 3.64 | 4.55 | 5.46 |

Intermediate widths at proportionate prices. Seven and eight ply belts made at an advance of seventy-five and one hundred per cent., respectively, on four-ply prices

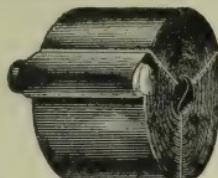
For endless belts add three feet for making splice.

CANVAS STITCHED BELTING

B3008

PAINTED

ENDLESS BELTS



B3009

Three extra feet will
be charged for the
Splice, subject to the
regular discount

| FOUR-PLY EQUAL TO SINGLE LEATHER | | FIVE-PLY | | SIX-PLY EQUAL TO LIGHT DOUBLE LEATHER | | EIGHT-PLY EQUAL TO HEAVY DOUBLE LEATHER | | TEN-PLY | |
|--|---------|-----------------|---------|--|---------|--|---------|---------|---------|
| Inches | Per ft. | Inches | Per ft. | Inches | Per ft. | Inches | Per ft. | Inches | Per ft. |
| 1 | .10 | 2 | .25 | .... | .... | .... | .... | 12 | 2.82 |
| 1 $\frac{1}{4}$ | .13 | 2 $\frac{1}{2}$ | .31 | .... | .... | .... | .... | 14 | 3.45 |
| 1 $\frac{1}{2}$ | .15 | 3 | .38 | 3 | .44 | .... | .... | .. | ... |
| 1 $\frac{3}{4}$ | .18 | 3 $\frac{1}{2}$ | .44 | 3 $\frac{1}{2}$ | .51 | 6 | 1.14 | 16 | 3.95 |
| 2 | .20 | 4 | .50 | 4 | .58 | 7 | 1.33 | 18 | 4.44 |
| 2 $\frac{1}{4}$ | .23 | 4 $\frac{1}{2}$ | .56 | 4 $\frac{1}{2}$ | .65 | 8 | 1.52 | 20 | 4.94 |
| 2 $\frac{1}{2}$ | .25 | 5 | .63 | 5 | .73 | 9 | 1.71 | 22 | 5.43 |
| 2 $\frac{3}{4}$ | .28 | 6 | .75 | 6 | .87 | 10 | 1.90 | 24 | 5.92 |
| 3 | .30 | 7 | .88 | 7 | 1.02 | 11 | 2.09 | 26 | 6.72 |
| 3 $\frac{1}{2}$ | .35 | 8 | 1.00 | 8 | 1.16 | 12 | 2.28 | 28 | 7.24 |
| 4 | .40 | 9 | 1.13 | 9 | 1.31 | 13 | 2.60 | 30 | 7.76 |
| 4 $\frac{1}{2}$ | .45 | 10 | 1.25 | 10 | 1.45 | 14 | 2.79 | 32 | 8.27 |
| 5 | .50 | 11 | 1.38 | 11 | 1.60 | 15 | 2.99 | 34 | 8.79 |
| 6 | .60 | 12 | 1.50 | 12 | 1.74 | 16 | 3.19 | 36 | 9.31 |
| 7 | .70 | 13 | 1.71 | 13 | 1.99 | 18 | 3.59 | .. | ... |
| 8 | .80 | 14 | 1.84 | 14 | 2.13 | 20 | 3.99 | 40 | 10.34 |
| 9 | .90 | 15 | 1.98 | 15 | 2.29 | 22 | 4.39 | .. | ... |
| 10 | 1.00 | 16 | 2.10 | 16 | 2.44 | 24 | 4.79 | 44 | 11.94 |
| 11 | 1.10 | 18 | 2.36 | 18 | 2.74 | 26 | 5.43 | 48 | 13.54 |
| 12 | 1.20 | 20 | 2.63 | 20 | 3.05 | 28 | 5.85 | .. | ... |
| 13 | 1.37 | 22 | 2.89 | 22 | 3.35 | 30 | 6.27 | 52 | 14.67 |
| 14 | 1.47 | 24 | 3.15 | 24 | 3.65 | 32 | 6.69 | .. | ... |
| .... | .... | .... | .... | 26 | 4.15 | 36 | 7.52 | 56 | 15.80 |
| .... | .... | .... | .... | 28 | 4.47 | 40 | 8.36 | 60 | 16.92 |
| .... | .... | .... | .... | 30 | 4.79 | 48 | 10.94 | .. | .... |

Endless Thresher Belt B3009

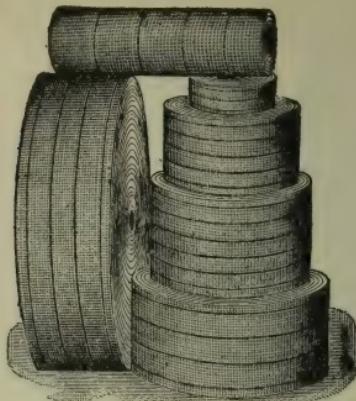
Made of the same material that our Roll Canvas Belt is made of and are well stitched. The Lap is made especially strong to withstand the hard strain these belts are put to.

Carried in Stock as Follows:

6-inch 4-ply Belts in lengths from 80 feet to 160-feet. 7-inch 4-ply Belts in lengths from 80 feet to 160 feet. 7-inch 5-ply Belts in lengths from 130 feet to 160 feet. 8-inch 4-ply Belts in lengths from 80 feet to 160 feet. 8-inch 5-ply Belts in lengths from 140 feet to 160 feet. 9-inch and 10-inch Belts made to order.

**SOLID
WOVEN
SPECIAL**

(Not Painted)



**WHITE
COTTON
BELTING**

B3014

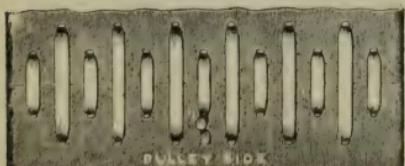
| | | | | | | | | | | | |
|------------------|--------------------|-----|-----|-----|------|------|------|------|------|------|------|
| Two-Ply | Width.....inches | 1 | 1½ | 2 | 2½ | 3 | 3½ | 4 | 5 | 6 | 7 |
| | Price.....per foot | .04 | .05 | .06 | .06½ | .07 | .08 | .09 | .13 | .17 | .19 |
| | Width.....inches | 8 | 9 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| | Price.....per foot | .21 | .23 | .26 | .33 | .41 | .49 | .57 | .61 | .65 | .69 |
| Three-Ply | Width.....inches | 1½ | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 |
| | Price.....per foot | .06 | .08 | .10 | .12 | .14 | .15 | .17 | .19 | .23 | .27 |
| | Width.....inches | 8 | 9 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| | Price.....per foot | .31 | .35 | .39 | .48 | .60 | .72 | .82 | .90 | 1.00 | 1.10 |
| Four-Ply | Width.....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ | 5 | 6 | 7 | 8 |
| | Price.....per foot | .12 | .14 | .16 | .18 | .21 | .24 | .26 | .30 | .34 | .38 |
| | Width.....inches | 9 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | ... |
| | Price.....per foot | .44 | .50 | .60 | .75 | .90 | 1.00 | 1.15 | 1.25 | 1.55 | .... |
| Five-Ply | Width.....inches | 4 | 4½ | 5 | 5½ | 6 | 7 | 8 | 9 | | |
| | Price.....per foot | .34 | .36 | .38 | .40 | .42 | .45 | .50 | .56 | | |
| | Width.....inches | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | | |
| | Price.....per foot | .63 | .75 | .94 | 1.12 | 1.28 | 1.44 | 1.62 | 1.80 | | |

Can furnish any width cotton belting up to 36 inches.

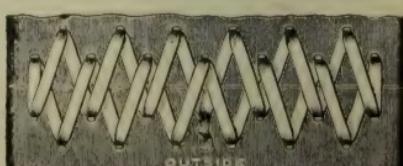
COTTON SAND BELTING

| | | | | | | | | | | | | |
|--------------------|-----|------|------|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Width.....inches | 1 | 2 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 14 | 16 | 18 |
| Price.....per foot | .06 | .07½ | .10½ | .15 | .18 | .24 | .36 | .48 | .60 | .72 | .90 | 1.10 |

Best Method of Lacing LEATHER, RUBBER, CANVAS, and COTTON BELTING



B3015



TO FIND THE LENGTH OF A BELT

When pulleys are small or about the same diameters, add the diameters of the two pulleys together, divide the result by two, and multiply the quotient by three and one-seventh. Add the product to twice the distance between the centers of shafts, and you have the length required.

EXAMPLE

$$\begin{array}{r}
 \begin{array}{l} 5 \text{ ft. diam. one pulley.} \\ 3 \quad " \quad " \quad " \end{array} & \begin{array}{l} 20 \text{ ft. distance between centers.} \\ 2 \end{array} \\
 \underline{2)8} \text{ sum of diameters.} & \underline{40} \text{ ft.} \\
 4 = \frac{1}{2} \text{ sum.} & 12.57 \\
 \underline{3\frac{1}{7}} & \underline{52.57} \text{ ft.=} \\
 12.57 \text{ ft.} & 52 \text{ ft. } 6\frac{3}{8} \text{ in.} - \text{length of belt.}
 \end{array}$$

In putting on belting it should be stretched as tightly as possible, and with wide belts this can be done best by the use of clamps secured firmly to each end of the belt and drawn together by clamp rods running parallel with and outside the edges of the belt. There is no danger of breaking, as a belt six inches wide and 3-ply thick will stand a direct strain of 5,000 pounds, and other sizes in proportion.

HORSEPOWER OF BELTING

An easily remembered horsepower rule on which to base mental calculations for rubber belting is that a 4-ply rubber belt, running 4,000 feet per minute, will transmit 5 horsepower per inch of width. Proportionate powers for other plies and speeds.

In comparing Rubber and Leather beltings the relative power transmission values are generally considered to be as follows:

$$\begin{array}{ll}
 3 \text{ or } 4 \text{ ply rubber belt} & \text{single leather belt.} \\
 5 \text{ or } 6 \text{ ply} & " \quad " \quad = \text{double} \quad " \quad " \\
 7 \text{ or } 8 \text{ ply} & " \quad " \quad = \text{triple} \quad " \quad "
 \end{array}$$

1. To find the horsepower of any rubber belt: Multiply together the number of plies in the belt, its width in inches, the pulley diameter in inches, and the speed in rotations per minute, then divide by 12,000.

EXAMPLE.—4-ply belt, 6 inches wide; 24-inch pulley; 400 r. p. m.

$$4 \times 6 \times 24 \times 400 \div 12,000 = 19.2 \text{ h. p.}$$

2. To find the proper weight of belt to use: Multiply the horsepower by 12,000 and divide by the product of the belt width in inches, the pulley diameter in inches, and the speed in rotations per minute.

EXAMPLE.—50 horsepower; 60 x 8-inch pulley; 260 r. p. m.

$$\begin{aligned}
 50 \times 12,000 &= 600,000 \\
 60 \times 8 \times 260 &= 124,800 \\
 600,000 \div 124,800 &= 4.8 \text{ plies, or a 5-ply belt.}
 \end{aligned}$$

3. To find width and weight of belt: First multiply the horsepower by 12,000; second, multiply the pulley diameter in inches by the speed in rotations per minute; divide the first by the second, and then divide by various numbers of plies till a desirable corresponding belt width is secured.

EXAMPLE.—180 horsepower; 58-inch pulley; 320 r. p. m.

$$\begin{aligned}
 12,000 \times 180 &= 2,160,000 \\
 54 \times 320 &= 17,280 \\
 2,160,000 \div 17,280 &= 125
 \end{aligned}$$

For 6-ply: $125 \div 6 = 20.43$ (20 or 22-inch belt.)
 For 7-ply: $125 \div 7 = 17.86$ (18-inch belt.)

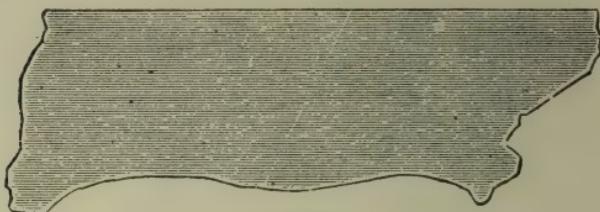
4. To find the speed necessary, other conditions being fixed: Multiply the horsepower by 12,000 and divide by the product of the number of plies in the belt, the belt width in inches, and the pulley diameter in inches.

EXAMPLE.—75 horsepower; 5-ply belt, 12 inches wide; 40-inch pulley.

$$\begin{aligned}
 75 \times 12,000 &= 900,000 \\
 5 \times 12 \times 40 &= 2,400 \\
 900,000 \div 2,400 &= 375 \text{ r. p. m.}
 \end{aligned}$$

ARC OF CONTACT

The above formula presumes a wrap of 180 degrees, or one-half the circumference of the pulley. If the belt touches only three-fourths of the half circumference of the pulley, it can transmit only three-fourths its rated power. Or if, by use of a tightener, the belt is made to touch five-eighths of the whole circumference, one-fourth more power can be transmitted than the formula would allow.

LACE LEATHER

B3016

In Sides from 10 to 24 Square Feet.

Our Lace Leather is finding firm friends wherever used. It is made from selected hides and so prepared that it does not become hard or brittle with age.

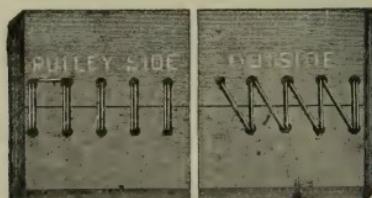
We carry three qualities of Rawhide, also Indian Tanned and Special Tanned.

CUT BELT LACING

B3018

| | | | | | | | |
|------------------------|---------------|----------------|---------------|----------------|---------------|---------------|---------------|
| Price.....per 100 feet | $\frac{1}{4}$ | $\frac{5}{16}$ | $\frac{3}{8}$ | $\frac{7}{16}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ |
| Width .....inches | 1.25 | 1.50 | 1.75 | 2.00 | 2.25 | 3.00 | 3.75 |

This is cut from all of our grades.

WIRE BELT LACING

B3020

| | | | | |
|------------------------|-------------|---------------------|---------|----------|
| Number | 0 | 1 | 2 | 3 |
| For Belts .....inches | 2 and under | $2\frac{1}{2}$ to 6 | 6 to 20 | 20 to 40 |
| Price.....per 100 feet | 2.00 | 2.00 | 2.00 | 2.00 |

FLEXIBLE STEEL LACING APPLIED WITH A HAMMER

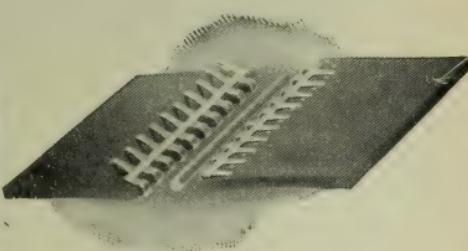
No. 2



B3022

Pinless Hinge Style

No. 3



B3023

Hinge with Rawhide Pin

SIZE NO. 2

For light single leather and rubber or textile, not over $\frac{3}{8}$ inch thick. Packed in boxes as follows:

| | |
|---|------|
| Box C—50 2-in. laces (100 inch.) | 1.90 |
| Box D—33 3-in. laces (99 inch.) | 1.75 |
| Box E—25 4-in. laces (100 inch.) | 1.75 |
| Box B-Assorted, 10 each, 1, 2, 3 and 4-inch for 100 inches of belting | 1.80 |
| Box A-Assorted, 2, 3 and 4-inch lengths for 54 inches in width of belting | 1.00 |

SIZE NO. 4

For medium double leather and rubber or textile belting, not over $\frac{3}{8}$ -inch thick. Put up in boxes as follows:

| | |
|---|------|
| Box P—25 4-inch laces (50 pcs.) or sufficient for 100 inches of belting..... | 2.50 |
| Box T-Assorted, 24 inches of No. 2, 14 inches No. 3, and 8 inches No. 4..... | 1.00 |
| Box O—Containing 9 4-inch laces (18 pcs.) or sufficient for 36 in. width of belting | 1.00 |

SIZE NO. 3

For heavy single and light double leather, 4 and 5 ply rubber and textile belts, not over $\frac{3}{8}$ inch thick. Hinges on a rawhide pin, therefore separable—Prongs clinch through from both sides of the belt—Especially adapted for use on overhead belts. Put up in boxes as follows:

| | |
|--|------|
| Box I—33 3-inch laces (66 pcs.) and 99 inches rawhide pins.. | 2.50 |
| Box K—25 4-inch laces (50 pcs.) and 100 inches rawhide pins. | 2.50 |
| Box H—37 inches assorted 3-inch and 4-inch lengths with 37 inches rawhide pins..... | 1.00 |
| Box L—Contains 21 inches of No. 3, and 24 inches of No. 2, assorted 3-inch and 4-inch lengths..... | 1.00 |

Flexible rocking joint insures perfect contact with pulley.

Can be used with an idler as both sides are alike.

No punch holes to weaken belt. 4-inch belt laced in 4 minutes.

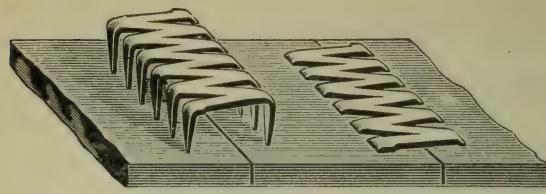
COPPER RIVETS AND BURRS—B3025

Price Per Pound

| No..... | 3 to 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---------------------------|--------|-----|-----|-----|-----|-----|-----|-----|-----|
| In 1 lb. Boxes.... | .49 | .50 | .52 | .54 | .56 | .58 | .60 | .65 | .70 |
| " $\frac{1}{2}$ " " | .52 | .53 | .55 | .57 | .59 | .61 | .63 | .68 | .73 |

**TUBULAR RIVETS—Not illustrated B3026**

Sizes, $\frac{1}{16}$ -inch, $\frac{1}{16}$ -inch and $\frac{3}{16}$ -inch..... per 1000 2.00



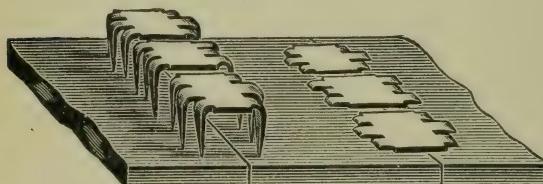
READY TO APPLY FINISHED JOINT

B3027

BRISTOL'S
BELT LACING

One hundred inches in a box.

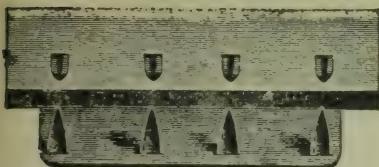
| No. | Use for | Per Box |
|-----|---|---------|
| 00 | Split and Extra Light Belts, $\frac{1}{16}$ to $\frac{1}{8}$ inch thick..... | 1.00 |
| 0 | " Leather Belts, $\frac{1}{8}$ to $\frac{3}{16}$ inch thick..... | 1.00 |
| 1 | Single " $\frac{3}{16}$ to $\frac{1}{4}$ " " | 1.50 |
| 2 | Heavy, Wide Single Leather Belts, $\frac{1}{4}$ to $\frac{5}{16}$ inch thick..... | 2.00 |
| 3 | Double Leather Belts, $\frac{5}{16}$ to $\frac{3}{8}$ inch thick..... | 2.50 |
| 4 | Heavy Double Leather Belts, $\frac{3}{8}$ to $\frac{7}{16}$ inch thick..... | 3.00 |
| 5 | Extra Heavy Double Leather Belts, $\frac{7}{16}$ to $\frac{9}{16}$ inch thick..... | 3.50 |
| 100 | Light Rubber and Cotton Belts, $\frac{1}{16}$ to $\frac{1}{8}$ inch thick..... | 1.10 |
| 10 | 2-ply " " " $\frac{1}{8}$ to $\frac{3}{16}$ " " | 1.10 |
| 11 | 3 " " " " $\frac{1}{16}$ to $\frac{1}{4}$ " " | 1.65 |
| 12 | 4 " " " " $\frac{1}{4}$ to $\frac{5}{16}$ " " | 2.20 |
| 13 | 5 " " " " $\frac{5}{16}$ to $\frac{3}{8}$ " " | 2.75 |
| 14 | 6 " " " " $\frac{3}{8}$ to $\frac{7}{16}$ " " | 3.30 |
| 15 | 7 and 8-ply Rubber and Cotton Belts, $\frac{1}{16}$ to $\frac{9}{16}$ inch thick..... | 3.85 |
| 17 | 8-ply and Extra Heavy Rubber and Cotton Belts..... | 4.95 |
| 19 | 10- " " " Conveyor Belts..... | 6.05 |
| 111 | Single Leather Rubber and Cotton Belts, $\frac{3}{16}$ to $\frac{1}{4}$ inch thick..... | 1.65 |
| 112 | " " " " $\frac{1}{4}$ " $\frac{5}{16}$ " " | 2.20 |
| 113 | Double " " " " $\frac{5}{16}$ " $\frac{3}{8}$ " " | 2.75 |
| 114 | " " " " $\frac{3}{8}$ " $\frac{7}{16}$ " " | 3.30 |
| 115 | " " " " $\frac{7}{16}$ " $\frac{1}{2}$ " " | 3.85 |



B3028

STAR STEEL
BELT HOOKS

| No. | | Per 100 |
|-----|--|---------|
| 00 | For Light Leather, Rubber or Cotton Belts, $\frac{1}{16}$ to $\frac{1}{8}$ -inch thick, $\frac{3}{16}$ to $\frac{1}{2}$ inches wide, 200 in a box..... | .80 |
| 0 | For Light Leather, Rubber or Cotton Belts, $\frac{1}{8}$ to $\frac{3}{16}$ -inch thick, $\frac{1}{2}$ to $\frac{3}{4}$ inches wide, 200 in a box..... | 1.00 |
| 1 | For Single Leather, 3-ply Rubber or Cotton Belts, 1 to 5 inches wide, 100 in a box..... | 1.20 |
| 2 | For Heavy Single or Light Double Leather, 4-ply Rubber or Cotton Belts, 1 to 8 inches wide, 100 in a box..... | 2.00 |
| 3 | For Double Leather, 4 to 6-ply Rubber or Cotton Belts, 1 to 12 inches wide, 100 in a box..... | 3.40 |
| 4 | For Heavy Double Leather, 6 to 8-ply Rubber or Cotton Belts, 1 inch wide and up, 100 in a box..... | 5.00 |
| 5 | For Extra Heavy Double Leather, 6 to 8-ply Rubber or Cotton Belts, $1\frac{1}{2}$ inch wide and up, 100 in a box..... | 9.00 |
| 6 | For Extra Heavy Double Leather, Rubber or Cotton Belts, from $\frac{1}{2}$ -inch to $\frac{11}{16}$ -inch thick, $1\frac{1}{2}$ -inch wide and up, 100 in a box..... | 12.00 |



STANDARD MALLEABLE FASTENERS

"Jewel, Potters or Novelty"

B3030

| FOR SINGLE LEATHER BELTS | | | DOUBLE LEATHER BELTS | | | 4-PLY OLD RUBBER BELTS | | |
|---|------------------|---------|---------------------------|-------------------|---------|---------------------------|------------------|---------|
| No. | | Per 100 | No. | | Per 100 | No. | | Per 100 |
| 1 | 1-in. Belts..... | 1.50 | 8 | 2 in. Belts..... | 5.00 | 18 | 3 in. { extra } | 10.00 |
| 2 | 1½-1½ in. Belts | 2.00 | 9 | 2½ " " | 6.50 | 19 | 4 " { wide } | 12.00 |
| 3 | 1½-2 " " | 2.50 | 10 | 3 " " | 7.50 | | | |
| 4 | 2½-2½ " " | 3.00 | 11 | 3½ " " | 8.50 | | | |
| 5 | 2¾-3 " " | 3.50 | 12 | 4 " " | 9.50 | | | |
| 6 | 3¼-3½ " " | 4.50 | | | | | | |
| 7 | 3¾-4 " " | 5.50 | | | | | | |
| EXTRA WIDE, FOR OLD SINGLE LEATHER BELTS | | | 3-PLY RUBBER BELTS | | | 5 AND 6-PLY RUBBER | | |
| No. | | Per 100 | No. | | Per 100 | No. | | Per 100 |
| 3½ | 2 in. Belts..... | 3.50 | 17 | 2½ in. Belts..... | 5.00 | 22 | 3 in. Belts..... | 10.00 |
| 4½ | 2½ " " | 4.50 | 20 | 3 " " | 7.00 | 23 | 4 " " | 12.00 |
| 5½ | 3 " " | 5.50 | 21 | 4 " " | 8.00 | | | |
| 6½ | 3½ " " | 6.50 | | | | | | |
| 7½ | 4 " " | 7.50 | | | | | | |
| 8½ | 5 " " | 9.50 | | | | | | |
| 4-PLY RUBBER BELTS | | | 7 AND 8-PLY RUBBER | | | 7 AND 8-PLY RUBBER | | |
| No. | | Per 100 | No. | | Per 100 | No. | | Per 100 |
| 13 | 2 in. Belts..... | 5.00 | 24 | 3 in. { extra } | 12.00 | 24 | 3 in. { extra } | 12.00 |
| 15 | 2½ " " | 6.50 | 25 | 4 " { wide } | 15.00 | 25 | 4 " 8-ply, extra | |
| 15 | 3 " " | 7.50 | 26 | wide and heavy, | | 26 | wide and heavy, | |
| 16 | 4 " " | 9.50 | | for the largest | | | and heaviest | |
| | | | | belt | | | belt | 25.00 |

STANDARD STEEL FASTENER

B3031

Packed 50 in Box

Packed 100 in Box

| SINGLE LEATHER 3-PLY | | |
|----------------------|--------------------------|---------|
| No. | | Per 100 |
| 51 | For 1 in. Belts..... | 1.50 |
| 52 | " 1½ and 3 in. Belts.... | 2.00 |
| 53 | " 2.4 and 6 " " | 2.50 |
| 54 | " 2½ to 5 " " | 3.00 |
| 54½ | " 3 in. Belts | 4.00 |

DOUBLE LEATHER 4-PLY

| No. | | Per 100 |
|-----|-------------------------------|---------|
| 55 | For 2, 4 and 6 in. Belts | 5.00 |
| 56 | " 2½ " 5 " " | 6.50 |
| 57 | " 3 " 6 " " | 7.50 |

5 AND 6-PLY RUBBER

| No. | | Per 100 |
|-----|------------------------------|---------|
| 58 | For 2, 4 and 6 in. Belts.... | 8.50 |
| 59 | " 2½, 5 and 10 in. Belts | 9.00 |
| 60 | " 3, 6 " 9 " " | 10.00 |

BEVELED HEAD TINNED RIVETS

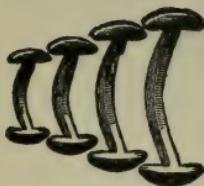
B3032

| Length Under Head ...Inches | $\frac{6}{16}, \frac{7}{16}, \frac{8}{16}$ | $\frac{9}{16}, \frac{10}{16}$ | $\frac{11}{16}, \frac{12}{16}$ |
|-----------------------------|--|-------------------------------|--------------------------------|
| Price..... per gross | .60 | .68 | .75 |



BLAKE BELT STUDS

B3033



One Hundred in a box.

| | | | | | |
|--------------------|-----|------|------|------|------|
| Number..... | 3 | 2 | 1 | 0 | 00 |
| Price..... per box | .90 | 1.25 | 1.65 | 2.00 | 2.50 |

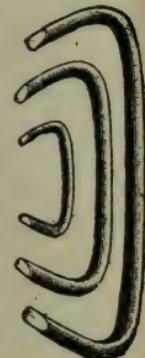
No. 3 for very thin belts, No. 2 medium leather belts, No. 1 for ordinary and single leather belts, No. 0 for light double leather belts, No. 00 for heavy double leather belts and 5 and 6 ply rubber.

POINTED BELT HOOKS

B3035

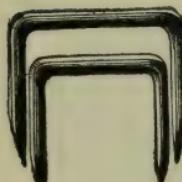
| No..... | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 |
|--------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Per 1000... | 2.00 | 2.40 | 2.60 | 2.80 | 3.00 | 3.50 | 4.00 | 5.00 | 6.00 | 8.50 | 11.00 | 14.00 |
| Length...In. | 2 $\frac{1}{2}$ | 2 $\frac{3}{4}$ | 3 $\frac{1}{4}$ | 3 $\frac{3}{4}$ | 3 $\frac{5}{8}$ | 1 $\frac{1}{2}$ | 1 $\frac{1}{8}$ | 1 $\frac{1}{4}$ | 1 $\frac{1}{8}$ | 1 $\frac{1}{4}$ | 2 $\frac{1}{3}$ | 2 $\frac{1}{2}$ |
| In Box.... | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 | 250 |

| No..... | 3 | 2 | Size | inches | 2 $\frac{1}{2}$ | 3 | 4 |
|------------------|-----------------|-----------------|---------------|--------|-----------------|-------|-------|
| Per 1000... | 16.00 | 20.00 | Per 1000..... | | 50.00 | 60.00 | 80.00 |
| Length....inch | 2 $\frac{1}{2}$ | 2 $\frac{3}{4}$ | In Box..... | | 50 | 50 | 50 |
| In Box..... | 250 | 250 | | | | | |



BUFFALO BELT HOOKS

B3036



| | | Per 1000 |
|---|--|----------|
| No. 15—1000 in box, for Light Single Belts..... | | 1.50 |
| No. 13—1000 " " Ordinary " " | | 2.00 |
| No. 10—1000 " " Wide " " | | 2.50 |
| No. 8—500 " " Light Double " " | | 3.50 |
| No. 7—250 " " Ordinary " " | | 4.00 |
| No. 6—250 " " Heavy " " | | 5.00 |

BELT COUPLING



B3038

For Round Belts of Every Description

| | | | | | | | | | | |
|--------------|------|------|------|-------|------|-------|-------|-------|-------|------|
| Size | 1/8 | 5/32 | 3/16 | 7/32 | 1/4 | 9/32 | 5/16 | 11/32 | 3/8 | 7/16 |
| Per dozen... | 3.00 | 3.00 | 2.50 | 2.50 | 2.00 | 2.50 | 2.50 | 3.00 | 3.00 | 3.50 |
| Size | 1/2 | 9/16 | 5/8 | 11/16 | 3/4 | 7/8 | 1 | 1 1/8 | 1 1/4 | |
| Per dozen... | 4.00 | 5.00 | 6.00 | 7.50 | 9.00 | 13.00 | 18.00 | 22.00 | 26.00 | |

COTTON HOSE**RUBBER LINED GARDEN HOSE**

B3050

PRICE PER FOOT IN 50 FOOT LENGTHS

| | | |
|---|----------|----|
| $\frac{1}{2}$ inch (with couplings attached)..... | per foot | 20 |
| $\frac{3}{4}$ " " " " | " | 25 |
| 1 " (without couplings) | " | 35 |

This hose can be furnished in 25 foot lengths, but in that case an extra charge is made for all couplings.

The "Eureka" Garden Hose for 400 pounds, water pressure.

The "Trojan" brand for 300 pounds.

The "Pioneer" brand for 250 pounds.

COTTON MILL HOSE (Rubber Lined)

B3051

IN 50 FOOT LENGTHS, WITHOUT COUPLINGS

| Internal Diameter inches | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{4}$ | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 |
|--------------------------|----|----------------|----------------|----|----------------|----------------|------|----------------|------|
| Per foot..... | 35 | 45 | 50 | 60 | 65 | 70 | 1.00 | 1.50 | 2.00 |

Can be furnished in half lengths.

The "Eureka" Mill Hose is seamless woven and rubber-lined and mildew-proof for mill and factory fire purposes. It is a single ply hose intended for factories, warehouses, hotels, etc., where hose is kept attached to stand-pipes, fire-pumps, etc. Will stand a pressure of 350 pounds per square inch.

The "Trojan" brand same as above except lighter weight, for 300 pounds pressure.

The "Pioneer" brand somewhat lighter than "Trojan," intended for 250 pounds pressure.

LINEN HOSE**"EUREKA BEST" LINEN HOSE (Unlined)**

Stripe consists of four warp strands each, red, white, and blue, laid side by side in order named. Made in any length and labeled strictly in accordance with the requirements and specifications of the Associated Factory Mutual Insurance Companies and National Fire Protection Association as an unlined linen fire hose for indoor factory fire protection. Pressure, 550 pounds.

"20TH CENTURY" LINEN HOSE (Unlined)

Labeled strictly in accordance with the "National Fire and Protection Requirements," and acceptable to the Factory Mutuals. Pressure, 500 pounds.

"PREMIER" LINEN HOSE (Unlined)

Approved by the New York Board of Fire Underwriters. In any length desired. Pressure, 400 pounds.

"TRADE" LINEN HOSE (Unlined)

Passed by the New York Board of Fire Underwriters. Pressure, 400 pounds.

"RED BALL" LINEN HOSE (Unlined)

Passed by the New York Board of Fire Underwriters. Pressure, 300 pounds.

PRICE PER FOOT WITHOUT COUPLINGS—B3053

| Internal Diameter | inches | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | $1\frac{3}{4}$ | 2 | $2\frac{1}{4}$ | $2\frac{1}{2}$ | 3 |
|-------------------------|---------|---------------|----|----------------|----------------|----------------|----|----------------|----------------|------|
| Eureka Best..... | per ft. | 24 | 27 | 30 | 33 | .. | 42 | 46 | 50 | 65 |
| 20th Century | " | 22 | 24 | 27 | 30 | 32 | 34 | 37 | 40 | 55 |
| Premier..... | " | 18 | 20 | 22 | 25 | 28 | 30 | 33 | 35 | 50 |
| Trade | " | 18 | 20 | 22 | 25 | 28 | 30 | 33 | 35 | 50 |
| Red Ball..... | " | 18 | 20 | 22 | 25 | 28 | 30 | 33 | 35 | 50 |
| Rubber Lined Linen..... | " | 30 | 35 | 45 | 50 | .. | 60 | 65 | 70 | 1.00 |

FIRE DEPARTMENT HOSE

B3054

Cotton, Rubber Lined, quoted on application.

RUBBER WATER HOSE

B3060

| Size..... inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | $1\frac{3}{4}$ | 2 | $2\frac{1}{4}$ | $2\frac{1}{2}$ | $2\frac{3}{4}$ | 3 | 4 |
|------------------|---------------|---------------|-----|----------------|----------------|----------------|------|----------------|----------------|----------------|------|------|
| 2-ply...per foot | .20 | .25 | .33 | .42 | .50 | .58 | .66 | .75 | .83 | .92 | .... | .... |
| 3- " " | .25 | .30 | .40 | .50 | .60 | .70 | .80 | .90 | 1.00 | 1.10 | 1.20 | 1.60 |
| 4- " " | .30 | .37 | .50 | .62 | .75 | .87 | 1.00 | 1.12 | 1.25 | 1.37 | 1.50 | 2.00 |
| 5- " " | .37 | .46 | .62 | .77 | .93 | 1.08 | 1.25 | 1.40 | 1.56 | 1.71 | 1.87 | 2.50 |
| 6- " " | .45 | .55 | .75 | .93 | 1.12 | 1.30 | 1.50 | 1.68 | 1.87 | 2.05 | 2.25 | 3.00 |

In ordering hose please state if for high, medium, or low pressure, or if for drainage purposes.

RUBBER GARDEN HOSE

The $\frac{1}{2}$ -inch, $\frac{5}{8}$ -inch and $\frac{3}{4}$ -inch Garden Hose kept in stock in 50 foot and 25 foot lengths, with couplings attached. Couplings extra on 25 ft. lengths.

| Size | inches | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ |
|------------|----------------|---------------|---------------|---------------|
| 2-ply..... | per foot cpld. | .20 | .23 | .25 |
| 3- " | " | .25 | .28 | .30 |
| 4- " | " | .30 | .34 | .37 |
| 5- " | " | .37 | .42 | .46 |
| 6- " | " | .45 | .50 | .55 |
| 7- " | " | .55 | .60 | .65 |

Rubber Garden Hose can be furnished in 500 foot length.

When ordering hose it is a good idea to state for what purpose it is to be used, and about what pressure it will be used on. Where pressure is liable to run over 40 pounds per square inch, it is advisable to buy 4-ply hose, or the (light) 6 or 7-ply. The duck, known as sheathing, in the five, six and seven-ply hose is lighter than in the regular two, three and four-ply, the five-ply corresponding with regular three-ply, and the six-ply corresponds with regular four-ply in strength. The quality of the duck and rubber in hose has more to do with the durability of the hose than the weight of the material or number of plies. A really high-grade hose costs two or three times what the ordinary grades do. Every one knows that pure rubber is a high-priced article.

PERFECTED HOSE



B3065

Water Hose, list B3050; Fire Hose, Steam Hose, list B3070; Hot Water Washout Hose, list B3066; Brewers' Hose, list B3070; Acid Hose, list B3067; Air Drill Hose, list B3070; also Air Brake Hose, Hose and Tubing for Pneumatic Tools (Steam list) can all be furnished in the first grade of the Perfected construction. The Perfected construction used in first grade only.

The Perfected construction increases the life of hose, as it reduces kinking, expansion, and elongation.

It combines the best qualities of cotton hose and rubber hose. Impossible to injure it by mildew or dampness.

Guaranteed to be the best in the world.

PERFECTED HOT WATER WASHOUT HOSE—B3066

Especially Adapted for Packing House use.

It will conduct hot water and steam up to 20 pounds pressure. The outer cover or jacket is composed of the same compound as the inner tube.

It will not harden with heat, from the fire box or the steam and water it is conducting.

Made in any length up to 50 feet.

ACID HOSE—B3067

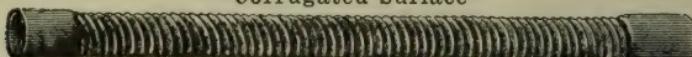
Four-Ply, Regular (not Perfected) Construction

| Inside Diam...inches | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{4}$ | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 |
|--------------------------------|---------------|------|----------------|----------------|------|----------------|----------------|------|----------------|------|
| $\frac{1}{8}$ inch Lining..... | .75 | 1.00 | 1.15 | 1.30 | 1.55 | 1.70 | 1.85 | 2.25 | 2.75 | 3.25 |
| $\frac{3}{16}$ " " | .90 | 1.15 | 1.35 | 1.55 | 1.85 | 2.10 | 2.30 | 2.75 | 3.25 | 3.75 |
| $\frac{1}{4}$ " " | 1.10 | 1.35 | 1.55 | 1.80 | 2.25 | 2.50 | 2.75 | 3.25 | 3.75 | 4.25 |

5 or 6-Ply made at additional cost of 25% for each added ply.

VACUUM, STEAM, AND PRESSURE HOSE

Corrugated Surface



B3068

STRAIGHT, PRICE PER FOOT

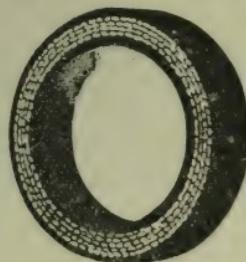
| Size In. | Vac- uum 2-Ply | Steam 3-Ply | Pres- sure 4-Ply | Pres- sure 5-Ply | Pres- sure 6-Ply | Size In. | Vac- uum 2-Ply | Steam 3-Ply | Pres- sure 4-Ply | Pres- sure 5-Ply | Pres- sure 6-Ply |
|-------------|----------------------|----------------|------------------------|------------------------|------------------------|-------------|----------------------|----------------|------------------------|------------------------|------------------------|
| 1 | 1.20 | 1.40 | 1.60 | 2.00 | 2.40 | 2 | 1.70 | 2.25 | 2.50 | 3.13 | 3.75 |
| 1 1/4 | 1.30 | 1.60 | 1.80 | 2.25 | 2.70 | 2 1/4 | 1.90 | 2.50 | 2.80 | 3.50 | 4.20 |
| 1 1/2 | 1.40 | 1.80 | 2.00 | 2.50 | 3.00 | 2 1/2 | 2.10 | 2.75 | 3.10 | 3.88 | 4.65 |
| 1 3/4 | 1.50 | 2.00 | 2.20 | 2.75 | 3.30 | ... | ... | ... | ... | ... | ... |

ANACONDA STEAM HOSE - B3069

ACONDA STEAM HOSE B500
Corrugated Surface. Wire Inserted.

Use same list as regular 5-ply Steam Hose.
Specially for blowing out tubes in high-pressure boilers. Will withstand great pressure and heat, and will retain its elasticity.

STEAM HOSE



B3070

Price list also applies to Air, Air Drill, Brewers', Car Heating, Oil, Pneumatic Signal, Steam, Steam Drill, Tanners', and Wine Hose.

| Size..... |Inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | $1\frac{3}{4}$ | 2 | $2\frac{1}{4}$ | $2\frac{1}{2}$ |
|------------|-------------|---------------|---------------|---------------|------|----------------|----------------|----------------|------|----------------|----------------|
| 3-ply..... | per foot | .35 | .43 | .51 | .67 | .85 | 1.02 | 1.18 | 1.34 | 1.50 | 1.66 |
| 4- " " | " | .43 | .51 | .67 | .83 | 1.04 | 1.25 | 1.45 | 1.66 | 1.87 | 2.08 |
| 5- " " | " | .51 | .63 | .83 | 1.03 | 1.30 | 1.56 | 1.81 | 2.07 | 2.33 | 2.60 |
| 6- " " | " | .63 | .76 | 1.00 | 1.24 | 1.56 | 1.87 | 2.17 | 2.49 | 2.80 | 3.12 |
| 7- " " | " | .... | .89 | 1.17 | 1.45 | 1.82 | 2.18 | 2.53 | 2.90 | 3.27 | 3.64 |
| 8- " " | " | .... | 1.02 | 1.34 | 1.66 | 2.08 | 2.50 | 2.90 | 3.32 | 3.74 | 4.16 |

For Marline, Wire Wrapped or Armoured Hose, see B3090, etc.

For Couplings, see B3112.

STEAM HOSE

Steam Hose is vulcanized at a temperature of about 250 degrees, while to vulcanize combs, knife handles, and other articles of hard rubber only about 300 degrees are required. It must be clear to you therefore that at a pressure on the hose of, say, 70 lbs., which generates a heat of 316 degrees, the wear and tear on the hose is most severe. Under the most favorable conditions, the life of steam hose cannot be very long, owing to the great heat to which it is subjected in service, the great pressure applied, and the frequency with which it is used.

The user should keep in mind that steam hose is not iron pipe, that there is a limit to its endurance, and that the higher the heat the sooner comes deterioration.

There are several different grades of hose and consequently various prices, low, medium, and high. Cheap hose, especially steam hose, is expensive in the long run. The best, although much higher, often more than double the price of cheap hose, is of course the best for service, but there are medium grades that often give very satisfactory service.

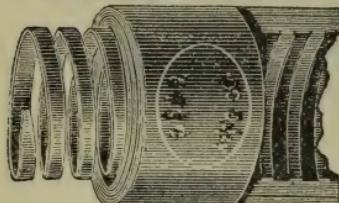
Temperature of steam at different pounds steam gauge pressure and ply of hose recommended.

| 30 pounds 250° | | 40 pounds 267° | | 50 pounds 280° | | 60 pounds 292° | |
|----------------|-------------------|----------------|-------------------|----------------|-------------------|-----------------|-------------------|
| 4 Ply for | $\frac{1}{2}$ in. | 4 Ply for | $\frac{1}{2}$ in. | 4 Ply for | $\frac{1}{2}$ in. | 4 Ply for | $\frac{1}{2}$ in. |
| 4 " | $\frac{3}{4}$ " | 4 " | $\frac{3}{4}$ " | 4 " | $\frac{3}{4}$ " | 5 " | $\frac{3}{4}$ " |
| 4 " | 1 " | 4 " | 1 " | 5 " | 1 " | 6 " | 1 " |
| 4 " | $1\frac{1}{4}$ " | 4 " | $1\frac{1}{4}$ " | 5 " | $1\frac{1}{4}$ " | 6 " | $1\frac{1}{4}$ " |
| 4 " | $1\frac{1}{2}$ " | 5 " | $1\frac{1}{2}$ " | 5 " | $1\frac{1}{2}$ " | 6 " | $1\frac{1}{2}$ " |
| 5 " | 2 " | 6 " | 2 " | 8 " | 2 " | 8 " | 2 " |
| 70 pounds 302° | | 80 pounds 311° | | 90 pounds 320° | | 100 pounds 327° | |
| 5 Ply for | $\frac{1}{2}$ in. | 6 Ply for | $\frac{1}{2}$ in. | 6 Ply for | $\frac{1}{2}$ in. | 8 Ply for | $\frac{1}{2}$ in. |
| 6 " | $\frac{3}{4}$ " | 6 " | $\frac{3}{4}$ " | 6 " | $\frac{3}{4}$ " | 8 " | $\frac{3}{4}$ " |
| 7 " | 1 " | 8 " | 1 " | 8 " | 1 " | 10 " | 1 " |
| 7 " | $1\frac{1}{4}$ " | 8 " | $1\frac{1}{4}$ " | 9 " | $1\frac{1}{4}$ " | 10 " | $1\frac{1}{4}$ " |
| 8 " | $1\frac{1}{2}$ " | 9 " | $1\frac{1}{2}$ " | 10 " | $1\frac{1}{2}$ " | 10 " | $1\frac{1}{2}$ " |
| 10 " | 2 " | 10 " | 2 " | .... | .... | .... | .... |

Lighter hose may be used but the heat will, of course, sooner burn away the lighter wall.

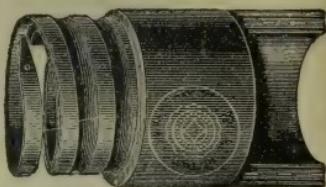
LARGE SUCTION HOSE

**ROUGH BORE ON FLAT
SPIRAL SPRING WIRE**



B3075

**SMOOTH BORE ON FLAT
SPIRAL SPRING WIRE**



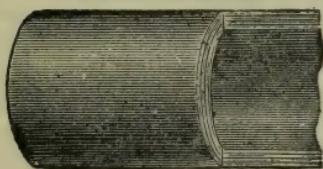
B3076

| | | | | | | |
|------------------------------|------|-------|-------|-------|-------|-------|
| Internal Diameter.....inches | 2 | 2½ | 3 | 3½ | 4 | 4½ |
| Rough Bore.....per foot | .... | 3.10 | 4.00 | 4.90 | 5.80 | 6.70 |
| Smooth "....." | 2.60 | 3.50 | 4.50 | 5.50 | 6.50 | 7.50 |
| Internal Diameter.....inches | 5 | 6 | 7 | 8 | 10 | 12 |
| Rough Bore.....per foot | 7.60 | 9.50 | 12.00 | 15.00 | 20.00 | 25.00 |
| Smooth "....." | 8.50 | 10.50 | 13.50 | 16.50 | 22.50 | 27.50 |

Can furnish 5½ in., 6½ in., 7½ in., and 9 in. at proportionate price.

Made to order in any length up to 50 feet, and with enlarged ends if desired.
For Suction Hose Nipples see list bottom of page.

**HARD RUBBER
SUCTION HOSE**



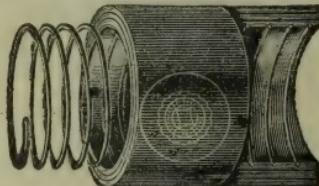
B3077

4 Ply made in 50-ft. lengths.

| Diam. In. | ¾ | 1 | 1¼ | 1½ |
|-----------|-----|-----|-----|------|
| Per ft. | .65 | .75 | .93 | 1.13 |

Is also made with Canvas Woven Jacket if desired.

**AGRICULTURAL WIRE
LINED SUCTION HOSE**



3078

Round Smooth Bore or Flat Wire Rough Bore Hose. Intended for Threshermen's Tank Pumps, etc. 2-Inch in 15-ft., 20-ft. and 25-ft. lengths, with enlarged ends, per ft., \$1.00.

AGRICULTURAL HARD RUBBER SUCTION HOSE

2-inch with Enlarged Ends for Threshermen Tank Pump, 15-foot, 20-foot, and 25-foot lengths, per foot, \$2.00.

CANVAS COVERED HOSE, SPECIAL

SUCTION HOSE NIPPLES—(Iron) B3079

| Size | Total Length | Price, Each | For Wiring in Each | Size | Total Length | Price, Each | For Wiring in Each |
|-------|--------------|-------------|--------------------|-------|--------------|-------------|--------------------|
| 2 in. | 7 in. | .60 | 1.70 | 5 in. | 12 in. | 3.60 | 2.75 |
| 2½ " | 7 " | .90 | 1.80 | 6 " | 14 " | 5.00 | 3.75 |
| 3 " | 8 " | 1.25 | 1.90 | 7 " | 16 " | 7.25 | 4.25 |
| 3½ " | 10 " | 1.75 | 2.20 | 8 " | 16 " | 8.75 | 4.75 |
| 4 " | 10 " | 2.00 | 2.50 | 10 " | 20 " | 16.25 | 5.75 |
| 4½ " | 12 " | 3.00 | 2.60 | 12 " | 20 " | 25.00 | 6.50 |

RUBBER**TUBING****B3080**

Made Smooth or Corrugated in White, also Smooth in Red.

| Int. Diameter | inches | $\frac{1}{8}$ | $\frac{3}{16}$ | $\frac{1}{4}$ | $\frac{5}{16}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | 1 |
|---------------------|--------|---------------|----------------|---------------|----------------|---------------|---------------|---------------|---------------|-----|
| Per Foot | | .08 | .12 | .16 | .18 | .20 | .25 | .30 | .35 | .45 |

Made with $\frac{1}{2}$ and $\frac{1}{16}$ inch, also $\frac{3}{32}$ inch wall. For gas and air.**CLOTH INSERTION, BEER PUMP, AND FIRE EXTINGUISHER TUBINGS—B3085**

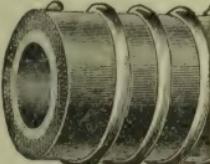
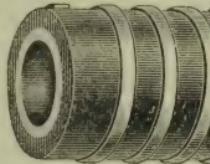
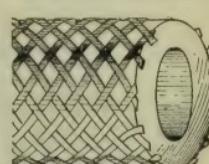
| Int. Diameter | inches | $\frac{1}{8}$ | $\frac{3}{16}$ | $\frac{1}{4}$ | $\frac{5}{16}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | 1 |
|---------------------|--------|---------------|----------------|---------------|----------------|---------------|---------------|---------------|---------------|-----|
| Per Foot | | .10 | .14 | .18 | .20 | .23 | .28 | .33 | .38 | .50 |

Acid Tubing, B3088. Extra quality, \$2.50 per pound.**PERFECTED TUBING—For Pneumatic Tools**

Particular attention is called to the excellent quality of our Tubing and Hose for Pneumatic Tools and Pneumatic Equipment of all kinds. The inner tube is made of a special compound to withstand the action of oil and water, more or less of which is carried through the pipes from the air compressor.

This tubing is also made plain with Cloth Insertion.

| Int. Diameter | 4-Ply | 5-Ply | 6-Ply |
|--------------------|-------|-------|-------|
| $\frac{1}{8}$ inch | .35 | .43 | .51 |
| $\frac{3}{16}$ " | .43 | .51 | .63 |
| $\frac{1}{4}$ " | .51 | .63 | .76 |
| $\frac{5}{16}$ " | .67 | .83 | 1.00 |

MARLINE WINDING OR WIRE WINDING**MARLINE****B3090****ROUND WIRE****B3091****FLAT WIRE****B3092****BRAIDED JACKET****B3093**

| Extra per Foot for Marline or Wire Winding | Hose | inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | $1\frac{3}{4}$ | 2 | $2\frac{1}{4}$ | $2\frac{1}{2}$ |
|--|------------|--------|---------------|---------------|-----|----------------|----------------|----------------|-----|----------------|----------------|
| 3 Ply | .09 | .11 | .13 | .15 | .18 | .20 | .23 | .25 | .27 | | |
| 4 " | .10 | .12 | .14 | .16 | .19 | .21 | .24 | .26 | .28 | | |
| 5 " | .11 | .13 | .15 | .17 | .20 | .22 | .25 | .27 | .29 | | |
| 6 " | .12 | .14 | .16 | .18 | .21 | .23 | .26 | .28 | .30 | | |
| Extra per Foot for Wire Braiding | Hose | inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | $1\frac{3}{4}$ | 2 | $2\frac{1}{4}$ | 2 |
| 3-Ply | .09 | .14 | .18 | .22 | .26 | .29 | .37 | | | | |
| 4 " | .11 | .19 | .24 | .29 | .34 | .38 | .49 | | | | |
| 5 " | .14 | .24 | .30 | .36 | .42 | .48 | .61 | | | | |
| 6 " | .16 | .28 | .36 | .43 | .51 | .57 | .74 | | | | |

For Covering Hose with Canvas or Frictioned Duck, price of one extra ply is added to list price of hose.

HOSE PIPE WITH SCREW TIP



B3100

| Size..... | inches | $\frac{3}{4}$ | $\frac{3}{4}$ | $\frac{3}{4}$ | 1 | 1 | $1\frac{1}{4}$ | $1\frac{1}{4}$ | $1\frac{1}{2}$ | $1\frac{1}{2}$ |
|------------------------|-----------|---------------|----------------|---------------|----------------|-----------------|----------------|----------------|----------------|----------------|
| Length..... | inches | 6 | $7\frac{1}{2}$ | 12 | $8\frac{1}{2}$ | $12\frac{1}{2}$ | 12 | 15 | 13 | 15 |
| Hose Thread..... | per dozen | 7.00 | 8.00 | 10.00 | 10.00 | 12.00 | 20.00 | 24.00 | 25.00 | 30.00 |
| Iron Pipe Thread | " | 8.00 | 9.20 | 11.20 | 11.20 | 13.20 | 21.20 | 25.00 | 27.50 | 32.50 |

| Size..... | inches | 2 | 2 | 2 | $2\frac{1}{2}$ | $2\frac{1}{2}$ | $2\frac{1}{2}$ | $2\frac{1}{2}$ | $2\frac{1}{2}$ | .... |
|------------------------|-----------|-------|-------|-------|----------------|----------------|----------------|----------------|----------------|------|
| Length..... | inches | 12 | 15 | 20 | 15 | 20 | 24 | 30 | 36 | .... |
| Hose Thread..... | per dozen | 38.00 | 45.00 | 50.00 | 75.00 | 96.00 | 100.00 | 144.00 | 157.00 | .... |
| Iron Pipe Thread | " | 41.00 | 48.00 | 53.00 | 78.50 | 99.50 | 103.50 | 150.00 | 163.00 | .... |

HOSE PIPE WITH COCK



B3101

| Size..... | inches | $\frac{3}{4}$ | $\frac{3}{4}$ | $\frac{3}{4}$ | 1 | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | $2\frac{1}{2}$ |
|-----------------------|--------|----------------|---------------|---------------|-------|-------|----------------|----------------|-------|----------------|----------------|
| Length..... | " | $6\frac{3}{4}$ | 8 | 12 | 8 | 12 | 12 | 12 | 12 | 20 | 24 |
| Hose Thread, per doz. | | 11.00 | 13.00 | 18.00 | 15.00 | 20.00 | 40.00 | 55.00 | 80.00 | 160.00 | 175.00 |
| Iron Pipe" | | 12.20 | 14.20 | 19.20 | 18.00 | 23.00 | 43.00 | 60.00 | 83.00 | 170.00 | 185.00 |

PLAIN HOSE PIPES

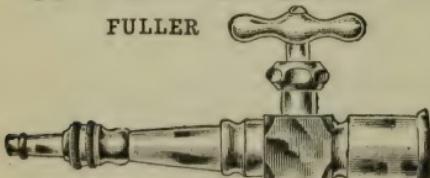


B3102

| Size..... | inches | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | 2 | $2\frac{1}{2}$ | $2\frac{1}{2}$ |
|------------------------|-----------|---------------|------|----------------|----------------|----------------|-------|----------------|----------------|
| Length..... | " | 3 | 4 | $4\frac{3}{4}$ | $5\frac{3}{4}$ | $6\frac{1}{4}$ | 12 | $7\frac{1}{2}$ | 12 |
| Hose Thread..... | per dozen | 4.00 | 5.00 | 12.00 | 18.00 | 26.00 | 34.00 | 37.40 | 55.00 |
| Iron Pipe Thread | " | 5.00 | 6.25 | 13.75 | 19.75 | 29.00 | 39.00 | 39.50 | 60.00 |

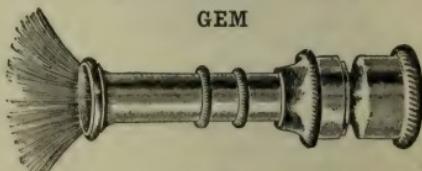
COMBINATION SPRAY AND SOLID STREAM NOZZLES

FULLER



B3104

GEM



B3105

| Size..... | inches | $\frac{3}{4}$ | 1 | Size..... | inches | $\frac{3}{4}$ | 1 |
|-------------|-----------|---------------|-------|-------------|-----------|---------------|-------|
| Price | per dozen | 18.00 | 30.00 | Price | per dozen | 10.00 | 15.00 |

UNDERWRITERS' HOSE PIPES



B3106

| Size | inches | 2 | 2½ | 2½ | 2½ |
|--|--------|-------|-------|-------|-------|
| Length | " | 20 | 24 | 30 | 36 |
| Wound and Painted | each | 9.00 | 11.00 | 12.00 | 15.00 |
| Plain Brass | " | 7.50 | 9.50 | 11.00 | 13.50 |
| Wound and Painted, without Handles | " | 6.50 | 8.50 | 10.00 | 12.50 |
| Rubber Tube, Swivel Handles ..... | " | ..... | ..... | 15.00 | 18.00 |
| Leather ....." | " | ..... | ..... | ..... | 18.00 |

HOSE COUPLINGS



B3110

| Size | inches | ½ | ¾ | 1 | 1¼ | 1½ | 2 | 2½ |
|--------------------------------|----------|------|------|------|-------|-------|-------|-------|
| Hose Thread | per doz. | 2.40 | 2.40 | 4.40 | 10.00 | 14.00 | 24.00 | 48.00 |
| Iron Pipe Thread | " | 2.65 | 2.65 | 4.65 | 10.50 | 15.00 | 26.00 | 50.00 |
| Female Half, Hose Thread | " | 1.80 | 1.80 | 3.00 | 7.20 | 9.60 | 16.20 | 31.80 |
| " " Pipe" | " | 1.80 | 1.80 | 3.25 | 7.80 | 10.80 | 17.40 | 32.80 |

Couplings, doz., 3 in., \$75.00; Iron Pipe Thread, 3 in., \$76.00; 3½ in., \$120.00;
4 in., \$150.00, etc.

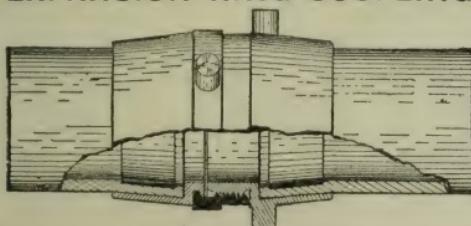
STEAM HOSE COUPLINGS



B3112

| Size | inches | ½ | ¾ | 1 | 1¼ | 1½ | 2 | 2½ |
|--------------------------------|----------|-------|-------|-------|-------|-------|-------|-------|
| Hose Thread | per doz. | 15.00 | 15.00 | 18.00 | 24.00 | 30.00 | 42.00 | 72.00 |
| Iron Pipe Thread | " | 15.50 | 15.50 | 19.00 | 25.50 | 32.00 | 44.00 | 75.00 |
| Female Half, Hose Thread | " | 10.00 | 10.00 | 12.00 | 16.00 | 20.00 | 28.00 | 48.00 |
| " " Pipe" | " | 10.35 | 10.35 | 12.75 | 17.00 | 21.50 | 30.00 | 50.00 |

EXPANSION RING COUPLING



B3114

| Size | inches | 1 | 1¼ | 1½ | 2 | 2½ Light | 2½ Medium | 2½ Extra Heavy |
|--------------------|--------|------|------|------|------|----------|-----------|----------------|
| Price..... per set | 1.50 | 1.75 | 2.00 | 2.50 | 3.00 | 3.00 | 3.00 | 3.00 |



B3121

SHERMAN STAMPED BRASS HOSE CLAMP

| Size..... |inches | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | $\frac{3}{4}$ | $\frac{3}{4}$ |
|-------------------------|-------------|---------------|-----------------|-----------------|-----------------|------------------|----------------|
| Hose..... | ply | 2 | 3 | 4 | 2 | 3 | 4 |
| Price..... | per dozen | .60 | .60 | .60 | .60 | .60 | .60 |
| Inside Diam., Open..... | inches | $\frac{7}{8}$ | $\frac{15}{16}$ | $1\frac{1}{32}$ | $1\frac{3}{32}$ | $1\frac{13}{16}$ | $1\frac{1}{4}$ |

| Size..... |inches | 1 | 1 | $1\frac{1}{4}$ | $1\frac{1}{4}$ | $1\frac{1}{2}$ | $1\frac{1}{2}$ | 2 | 2 | $2\frac{1}{2}$ | $2\frac{1}{2}$ |
|-------------------------|-------------|-----------------|------------------|------------------|------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Hose..... | ply | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 |
| Price..... | per doz. | 2.00 | 2.00 | 2.50 | 2.50 | 3.00 | 3.00 | 4.00 | 4.00 | 7.00 | 7.00 |
| Inside Diam., Open..... | inches | $1\frac{1}{16}$ | $1\frac{17}{32}$ | $1\frac{21}{32}$ | $1\frac{13}{16}$ | $1\frac{15}{16}$ | $2\frac{1}{16}$ | $2\frac{9}{16}$ | $2\frac{9}{16}$ | $3\frac{1}{16}$ | $3\frac{1}{16}$ |

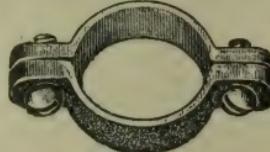
SHERMAN STEAM HOSE CLAMPS

| Size..... |inches | $\frac{3}{4}$ | $\frac{3}{4}$ | 1 | 1 | $1\frac{1}{4}$ | $1\frac{1}{4}$ | $1\frac{1}{2}$ | $1\frac{1}{2}$ | 2 | 2 |
|--------------------|-------------|-----------------|------------------|----------------|------------------|------------------|------------------|-----------------|------------------|-----------------|------|
| Hose..... | ply | 3 | 4 | 3 | 4 | 3 | 4 | 3-4 | 5 | 3 | 4 |
| Price..... | per doz. | 2.00 | 2.00 | 2.50 | 2.50 | 3.00 | 3.00 | 3.50 | 4.00 | 5.50 | 5.50 |
| Diam. Open, inches | | $1\frac{1}{16}$ | $1\frac{17}{32}$ | $1\frac{5}{8}$ | $1\frac{21}{32}$ | $1\frac{15}{16}$ | $1\frac{31}{32}$ | $2\frac{7}{32}$ | $2\frac{13}{32}$ | $2\frac{9}{16}$ | .... |



B3122

BRASS HOSE CLAMPS



B3123

Quoted on application.

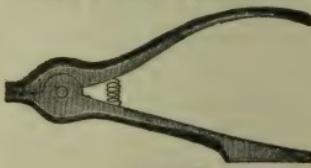
| Size |inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 |
|---------------------|-------------|---------------|---------------|------|----------------|----------------|------|----------------|-------|
| Price, Single | per doz. | 1.50 | 1.50 | 2.00 | 2.50 | 3.00 | 4.00 | 7.00 | 10.00 |

CALDWELL HOSE STRAP



B3124

HOSE STRAP FASTENER



B3125

CALDWELL HOSE STRAPS

| Hose |inches | $\frac{1}{2}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | $\frac{3}{4}$ | 1 | 1 | $1\frac{1}{4}$ | $1\frac{1}{4}$ | $1\frac{1}{2}$ | $1\frac{1}{2}$ |
|-------------|-------------|----------------|----------------|----------------|----------------|-----|----------------|----------------|----------------|----------------|----------------|
| Length..... | " | $3\frac{3}{8}$ | $3\frac{3}{4}$ | $4\frac{1}{8}$ | $4\frac{1}{2}$ | 5 | $5\frac{3}{8}$ | 6 | $6\frac{3}{8}$ | $6\frac{3}{4}$ | $7\frac{1}{8}$ |
| Price..... | per doz. | .40 | .40 | .60 | .60 | .80 | .80 | 1.00 | 1.00 | 1.20 | 1.20 |

HOSE STRAP FASTENERS

| Size |inches | $\frac{1}{2}$ to 1 | $1\frac{1}{4}$ to $1\frac{1}{2}$ |
|------------|-------------|--------------------|----------------------------------|
| Price..... | each | .50 | .75 |

HOSE MENDERS**BRASS****IRON****WOOD**

B3126

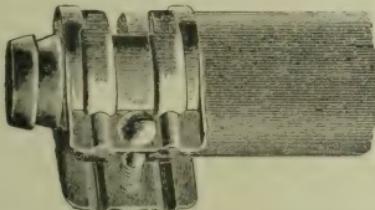


B3127



B3128

| Size Hose..... |inch | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 |
|----------------|-----------|---------------|---------------|-------|
| Brass..... | per dozen | 1.20 | 1.20 | ..... |
| Iron ..... | " | ..... | 1.00 | 1.50 |
| Wood..... | " | .50 | .50 | ..... |

SHERMAN MENDER CLAMP

B3129

| Size Hose..... |inch | $\frac{1}{2}$ | $\frac{3}{4}$ |
|----------------|-----------|---------------|---------------|
| Per Dozen..... | | 2.40 | 2.40 |

MALE

B3130

MALE AND FEMALE**HOSE NIPPLES**

B3131

| Size..... | inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 |
|----------------------|--------|---------------|---------------|------|----------------|----------------|-------|----------------|-------|----------------|-------|
| Male per dozen | | 3.50 | 3.50 | 5.00 | 9.00 | 10.00 | 14.00 | 28.00 | 40.00 | 50.00 | 75.00 |
| Male & Female " " | | 3.50 | 3.50 | 5.00 | 9.00 | 10.00 | 14.00 | 28.00 | 40.00 | 50.00 | 75.00 |

HOSE REDUCERS

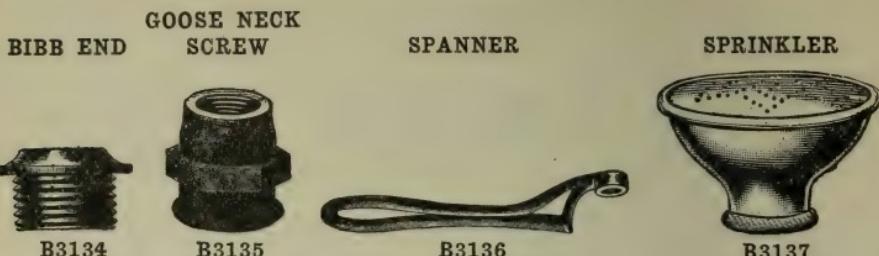
B3132

HOSE BUSHINGS

B3133

| Size..... |inches | $1 \times \frac{3}{4}$ | $1\frac{1}{4} \times \frac{3}{4}$ | $1\frac{1}{4} \times 1$ | $1\frac{1}{2} \times 1\frac{1}{4}$ | $2 \times 1\frac{1}{2}$ | $2\frac{1}{2} \times \frac{3}{4}$ | $2\frac{1}{2} \times 1$ |
|--|-------------|------------------------|-----------------------------------|-------------------------|------------------------------------|-------------------------|-----------------------------------|-------------------------|
| Price, Hose Reducers. per doz. Bushings " " | | 6.50 | 8.00 | 10.00 | 12.00 | 18.00 | 20.00 | 22.00 |

HOSE APPLIANCES



BIBB ENDS AND GOOSE NECK SCREWS

| Size..... | inches | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|-----------------------------|--------|---------------|---------------|---------------|------|----------------|----------------|-------|
| Hose Bibb Ends... per dozen | | 2.50 | 2.50 | 2.50 | 3.50 | 6.00 | 8.00 | 15.00 |
| Goose Neck Screws " | | ... | ... | 5.00 | ... | ... | ... | ... |

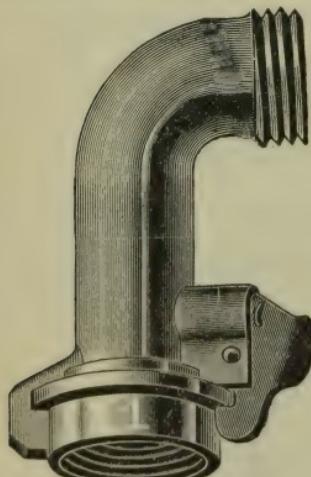
HOSE SPANNERS, MALLEABLE IRON—B3136

| Size..... | inches | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ |
|------------|--------|----------------|----------------|-----|----------------|
| Price..... | each | .12 | .15 | .20 | .25 |

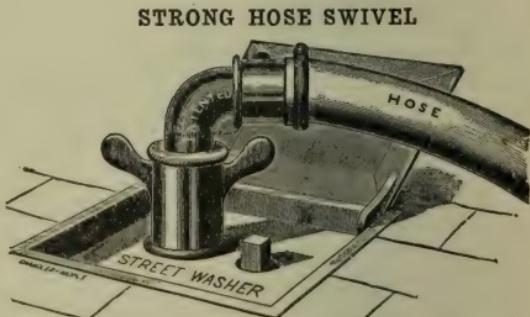
SPRINKLERS—B3137

| Diameter..... | inches | 2 | $2\frac{1}{4}$ | $2\frac{1}{2}$ | 3 |
|------------------|-----------|---------------|----------------|----------------|----------------|
| Size Thread..... | inches | $\frac{3}{4}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ |
| Price..... | per dozen | 4.50 | 5.25 | 6.00 | 9.00 |

SMITH HOSE SWIVEL No. 1



B3140



B3141

| | | | | | |
|---------------------|----------|------|--------------------------|------|------|
| No. 1..... | per doz. | 7.00 | $\frac{3}{4}$ -inch..... | each | 1.00 |
| " 2 (45° Bend)..... | " | 7.00 | $1\frac{1}{4}$ " | " | 1.80 |
| | | | $1\frac{1}{2}$ " | " | 3.65 |
| | | | | " | 5.80 |

HOSE FITTINGS, ETC.

HOSE CAP



B3142

FIRE HOSE REDUCER



B3143

Prices on application.

HOSE CAPS

| Size..... |inches | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 |
|---------------|-------------|---------------|-----|----------------|----------------|------|----------------|------|----------------|------|
| Hose Caps.... |each | .35 | .50 | .70 | .90 | 1.25 | 2.00 | 2.60 | 3.25 | 3.60 |

SIAMESE CONNECTIONS

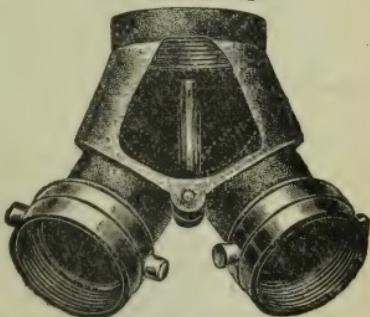


B3144



B3145

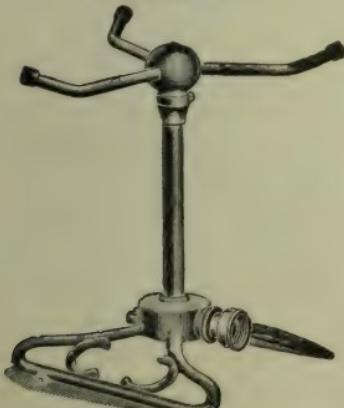
For Stand Pipes



B3146

| A | B | Size, Iron Pipe....inches | 3 | 4 |
|--|--|----------------------------|----------------|----------------|
| Two $2\frac{1}{2}$ Male, One $2\frac{1}{2}$ Female Loose Coupling. Price, Each | One $2\frac{1}{2}$ Male, Two $2\frac{1}{2}$ Female Loose Coupling. Price, Each | Size, Both Nozzles, inches | $2\frac{1}{2}$ | $2\frac{1}{2}$ |
| 10.00 | 13.00 | Price..... | 15.00 | 30.00 |

MAYFLOWER



B3150

Per Dozen, \$20.00.

LAWN
SPRINKLERS

ALL RIGHT



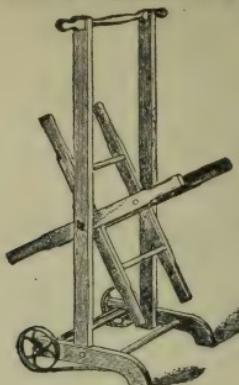
B3151

Per Dozen, \$4.00.

Four ft. Tall Sprinklers, B3152

Similar to B3150, with iron feet, 4 Arm. each \$8.00. 8 Arm, each \$10.00. With Basket and Ball, add \$4.00.

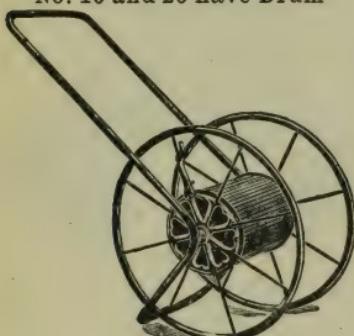
WOODEN HOSE REELS



B3155

Capacity, 100 ft. $\frac{3}{4}$ in. Hose. Each, \$1.50

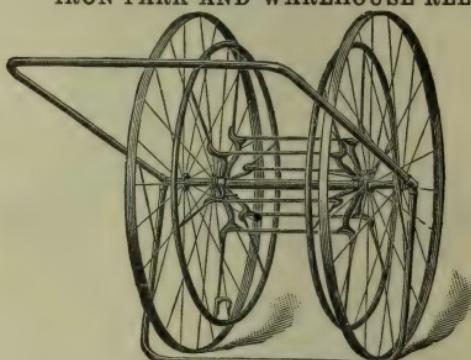
TUBULAR, ALL METAL
No. 10 and 20 have Drum



B3157

TUBULAR ALL METAL HOSE REELS

IRON PARK AND WAREHOUSE REEL



B3158

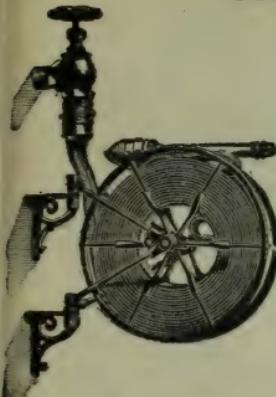
| B3157 | Number | 10 | 20 | *30 | *40 |
|--|--------|------|------|------|-------|
| Price..... | each | 3.50 | 4.00 | 6.50 | 25.00 |
| Capacity, $\frac{3}{4}$ inch 3 ply Rubber Hose | feet | 100 | 150 | 400 | 800 |
| " 1 " 4 " " | " | 50 | 75 | 150 | 300 |
| " 1 $\frac{1}{4}$ " 4 " " | " | .. | .. | 100 | 250 |
| " 1 $\frac{1}{4}$ " Rubber Lined Cotton Hose .. | " | .. | 100 | 200 | 500 |
| " 1 $\frac{1}{2}$ " " " | " | .. | 75 | 150 | 400 |
| " 2 " " " | " | .. | .. | 100 | 300 |

† Nos. 30 and 40 are without drum.

| IRON PARK REELS—Number | 21 | 31 | *41 | *51 | *61 |
|---|--------|------|-------|-------|-------|
| Price..... | each | 7.50 | 10.50 | 25.00 | 45.00 |
| Capacity, $\frac{3}{4}$ inch 3 ply Rubber Hose..... | feet | 200 | 500 | *250 | *400 |
| " 1 " 4 " " | " | 100 | 200 | *200 | *300 |
| " 1 $\frac{1}{4}$ " 4 " " | " | 75 | 150 | *150 | *250 |
| " 1 $\frac{1}{4}$ " Rubber Lined Cotton Hose " | " | 150 | 300 | .. | .. |
| " 1 $\frac{1}{2}$ " " " | " | 100 | 200 | 500 | 650 |
| " 2 " " " | " | 75 | 150 | 350 | 500 |
| " 2 $\frac{1}{2}$ " " " | " | 50 | 100 | 250 | 400 |
| Height of Wheels..... | inches | 28 | 34 | 42 | 48 |
| Weight..... | pounds | 40 | 50 | 145 | 200 |

*Capacity Rubber Hose No. 41, 51, and 61 is for 4 ply 1 $\frac{1}{2}$ inch, 2 inch, and 2 $\frac{1}{2}$ inch.

SWINGING WALL REELS

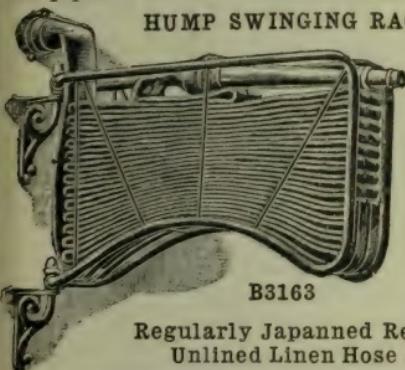


B3160

When ordering state whether Wall Brackets or Pipe Clamps are wanted, and if clamps, for what size pipe.

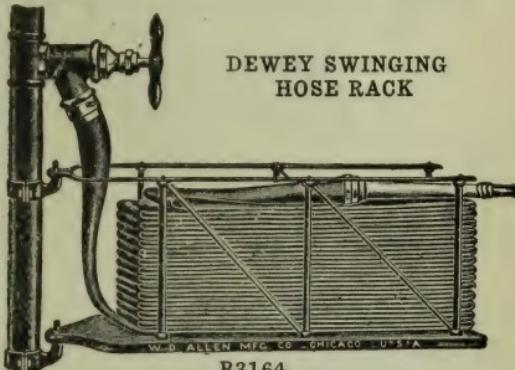
| No. | Capacity, Ft. | Size Hose Inches | Description of Hose | Diam. Inches | Price |
|------|---------------|------------------|------------------------------------|--------------|-------|
| 0 | 50 | 1½ or 1½ | Unlined Linen, One Tier | 15 | 6.00 |
| 00 | 50 | 2 | " " | 15 | 6.00 |
| 000 | 50 | 2½ | " " | 15 | 6.00 |
| 0½ | 75 | 1¼ or 1½ | " " | 17 | 6.00 |
| 0½ | 75 | 2 | " " | 17 | 6.00 |
| 000½ | 75 | 2½ | " " | 17 | 6.00 |
| 1 | 100 | 1¼ or 1½ | " " | 21 | 6.00 |
| 2½ | 100 | 2 | " " | 21 | 6.00 |
| 3½ | 100 | 2½ | " " | 21 | 6.00 |
| 2 | 150 | 1¼ or 1½ | " " | 26 | 6.00 |
| 3 | 150 | 2 | " " | 26 | 6.00 |
| 4 | 150 | 2½ | " " | 26 | 6.50 |
| 5½ | 200 | 1¼ or 1½ | " " | 21 | 7.00 |
| 6½ | 200 | 2 | " " | 21 | 7.50 |
| 7½ | 200 | 2½ | " " | 21 | 8.00 |
| 7 | 300 | 2½ | " " | 26 | 8.50 |
| 8 | 400 | 2½ | " " | 32 | 11.50 |
| 2 | 50 | 1¼ or 1½ | Cotton Rubber-lined Mill, One Tier | 26 | 6.00 |
| 3 | 50 | 2 | " " | 26 | 6.00 |
| 4 | 50 | 2½ | " " | 26 | 6.50 |
| 5 | 100 | 1¼ or 1½ | " " | 26 | 7.50 |
| 6 | 100 | 2 | " " | 26 | 8.00 |
| 7 | 100 | 2½ | " " | 26 | 8.50 |
| 8 | 150 | 2½ | " " | 32 | 11.50 |

HUMP SWINGING RACK



B3163

Regularly Japanned Red Unlined Linen Hose



DEWEY SWINGING HOSE RACK

| No. | Capacity Feet | Size Hose Inches | Price |
|------|---------------|------------------|-------|
| A0 | +50 | 1¼ or 1½ | 5.00 |
| A0X | +50 | 2 | 5.00 |
| A00 | +50 | 2½ | 5.00 |
| A1 | 100 | 1¼ or 1½ | 6.00 |
| A1X | 100 | 2 | 6.00 |
| A2 | 100 | 2½ | 6.00 |
| *A3 | 150 | 1¼ or 1½ | 7.00 |
| *A3X | 150 | 2 | 7.00 |
| *A4 | 150 | 2½ | 7.00 |
| *A5 | 200 | 1¼ or 1½ | 7.50 |
| *A5X | 200 | 2 | 7.50 |
| *A6 | 200 | 2½ | 8.00 |

† Made for 75 ft. hose at 50c extra list.

* Holds 50 ft. Rub. Lined Cotton Hose.

* " 100 " " " "

Racks furnished gold or aluminum bronze at the same figures; finished in nickel or copper plate at an additional cost of \$2.00 each, net.

For "Unlined Linen" Hose

| No. | Size of Hose Inches | Full Capacity, Feet | Price |
|-----|---------------------|---------------------|-------|
| 9 | 1½ or 2 | 50 | 5.00 |
| 10 | 2½ | 50 | 5.00 |
| 11 | 1½ or 2 | 100 | 6.00 |
| 12 | 2½ | 100 | 6.00 |
| 13 | 1½ or 2 | 150 | 7.00 |
| 14 | 2½ | 150 | 7.00 |

"Rubber Lined Linen" or "Mill" Hose

| | | | |
|----|---------|-----|------|
| 13 | 1½ or 2 | 50 | 7.00 |
| 14 | 2½ | 50 | 7.00 |
| 15 | 1½ or 2 | 100 | 7.50 |
| 16 | 2½ | 100 | 8.00 |

Nos. 15 and 16 will carry heavy hose of almost any make in fifty foot lengths.

Pipe Clamps to hang racks on risers can be furnished instead of brackets. State size of pipe they are to fit.

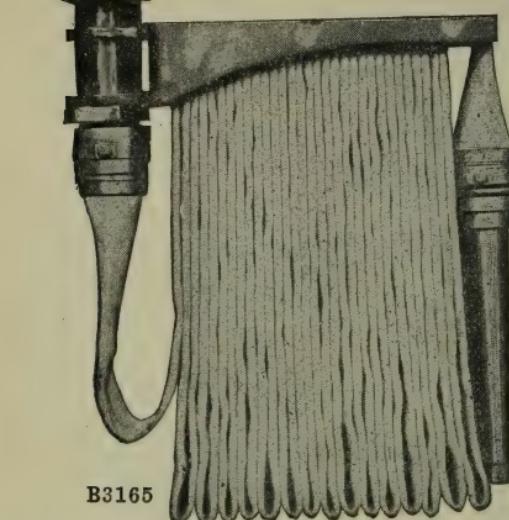
HOWARD HOSE RACK**HOWARD RACK WITH ATTACHMENT FOR VALVE****"JIFFY"
HOSE HANGER****FIG. 8****B3165**

Fig. 8 has attachment for valve as shown.
Fig. 5 has clamp for pipe, (like on B3166).
Fig. 4 has plate or bracket to screw onto wall.

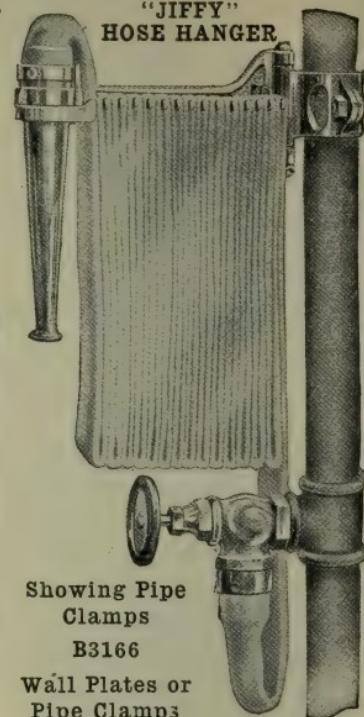
Price does not include valve.

| Style or Finish | No.1 | No.2 | No.3 |
|-------------------------------|-------|-------|-------|
| Japanned Red..... | 5.00 | 6.00 | 7.00 |
| Bronzed in Aluminum..... | 5.00 | 6.00 | 7.00 |
| " " Gold..... | 5.00 | 6.00 | 7.00 |
| Enameled White..... | 6.00 | 7.00 | 8.00 |
| Nickel Plate on Iron..... | 7.00 | 8.00 | 9.00 |
| " " Brass..... | 11.00 | 13.00 | 15.00 |
| Solid Brass Polished..... | 10.00 | 12.00 | 14.00 |
| " " Aluminum Polished..... | 10.00 | 12.00 | 14.00 |
| Oxidized on Iron..... | 7.00 | 8.00 | 9.00 |
| " " Brass..... | 11.00 | 13.00 | 15.00 |

Price Fig. 8 includes iron nipples. When brass nipples with collars are wanted, cost will be 1½-inch, \$1.00; 2-inch, \$1.25; 2½-inch, \$1.50 each net extra.

The hose is easily pulled from the rack by anyone, without any drilling, and without any possibility of the hose becoming tangled. This is rendered possible by shedding of the pins from the rack in the removal of the hose. Can furnish with Iron permanent Swinging Pins. Almost any length of hose can be placed on this rack; the length of the loop is simply a matter of taste. However, Figs. 4, 5, and 8 are intended, No. 1 for 50 feet unlined hose; No. 2 for 100 feet unlined or 50 feet of rubber lined hose; No. 3 for 150 feet of unlined or 100 feet of rubber lined hose. These racks are made to conform to the different sizes of hose. When ordering state kind, size, and length of hose to be placed on each rack.

Figure 8 illustrates latest improvement, and is adapted for use where the stand-pipe is invisible. For this construction an angle valve with female outlet is screwed close up against the wall; the outlet-pipe on which the rack turns is made of galvanized iron, and a collar screwed on the lower end supports the rack.

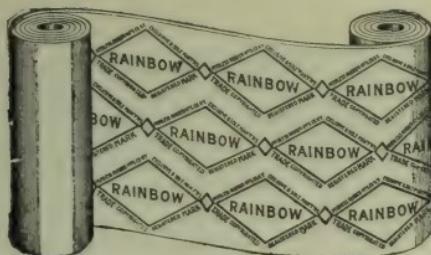
**Showing Pipe Clamps****B3166****Wall Plates or
Pipe Clamps**

A very ornamental hose hanger, the Jiffy is as quick as a wink in action. State if you require wall plates or pipe clamps. Valve is extra.

| | No.1 | No.2 | No.3 | No.4 |
|----------------------------|-------|-------|-------|-------|
| Capacity Unlined Hose, ft. | 50 | 75 | 100 | 125 |
| Galvanized..... | 5.50 | 6.50 | 7.50 | 8.00 |
| Japanned Red..... | 5.00 | 6.00 | 7.00 | 8.00 |
| Enameled White..... | 5.50 | 6.50 | 7.50 | 8.00 |
| Aluminum Bronze..... | 5.00 | 6.00 | 7.00 | 8.00 |
| Brass Plated..... | 8.00 | 9.00 | 10.00 | 11.00 |
| Nickel Plated..... | 8.00 | 9.00 | 10.00 | 11.00 |
| *Nickel Plated..... | 16.00 | 18.00 | 20.00 | 22.00 |
| *Polished..... | 14.00 | 16.00 | 18.00 | 20.00 |
| *Rough..... | 12.00 | 14.00 | 16.00 | 18.00 |

*The last three styles are of solid brass; balance are of cast-iron.

RAINBOW SHEET PACKING



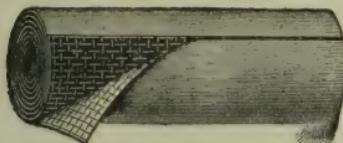
B3200

Price per pound, \$1.00.

Standard width one yard, in rolls of about 200 pounds each.

| | | | | | | | | | |
|--|------|----------------|----------------|----------------|---------------|----------------|---------------|---------------|---------------|
| Thickness | inch | $\frac{1}{2}$ | $\frac{1}{16}$ | $\frac{3}{32}$ | $\frac{1}{8}$ | $\frac{3}{16}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ |
| Approximate weight per square yard | lbs. | $3\frac{1}{2}$ | $6\frac{1}{2}$ | 10 | 14 | 20 | 30 | 40 | 60 |

RAINBOW SHEET PACKING WITH BRASS WIRE INSERTION



B3202

Price per pound, \$1.50.

Standard width 36 inch, any width made to order.

| | | | | | | | |
|----------------|------|---------------|----------------|----------------|---------------|----------------|---------------|
| Thickness..... | inch | $\frac{1}{2}$ | $\frac{1}{16}$ | $\frac{3}{32}$ | $\frac{1}{8}$ | $\frac{3}{16}$ | $\frac{1}{4}$ |
|----------------|------|---------------|----------------|----------------|---------------|----------------|---------------|

Approximate weight per square yard, slightly heavier than plain Rainbow Packing.

WIZARD SUPERHEAT AND HIGH PRESSURE STEAM PACKING

Thickness $\frac{1}{2}$, $\frac{1}{16}$, $\frac{3}{32}$, and $\frac{1}{8}$ -inch, weights approximately the same as Rainbow Packing.

Price per pound, \$1.50.

This packing is especially adapted for making very high pressure and superheat steam joints.

It is a combination of asbestos copper fibre and other heat-resisting substances, chemically treated in such a manner that at about 250 lbs. steam pressure it becomes practically one with the flange, and yet the joint can be broken and the Wizard replaced many times.



B3203

JENKINS '96 PACKING



B3205

Price..... per pound, \$0.80

Jenkins '96 is an unvulcanized sheet rubber packing, having many valuable characteristics which render it an ideal joint packing.

| | | | | | | | |
|--|--------|----------------|----------------|----------------|---------------|-----------------|-----------------|
| Thicknesses..... | inches | $\frac{1}{2}$ | $\frac{1}{16}$ | $\frac{3}{32}$ | $\frac{1}{8}$ | $\frac{3}{16}$ | $\frac{1}{4}$ |
| Approximate weight per square yard... pounds | | $2\frac{1}{4}$ | $5\frac{1}{2}$ | $8\frac{1}{4}$ | 11 | $16\frac{1}{2}$ | $22\frac{1}{2}$ |

It is regularly made 36 inches wide. Special widths to order. It is also made with wire insertion, for which net prices will be furnished on application.

To make a thicker gasket, two layers of thin packing can be used as the heat soon vulcanizes it into one solid gasket.

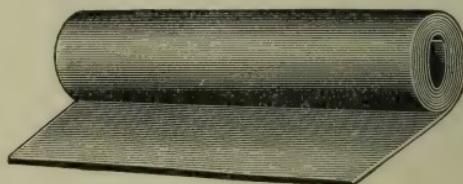
BLACK SHEET PACKING

EBONITE

Per Pound, \$1.00

N. B. O.

Per Pound, \$1.00



B3206

Thickness and weights approximately same as table at top of page.

VANDA SHEET PACKING

B3208

VANDA BLACK

B3209

VANDA BROWN

| | | | |
|----------------|--------|----------------|--------|
| Per Pound..... | \$1.25 | Per Pound..... | \$0.65 |
|----------------|--------|----------------|--------|

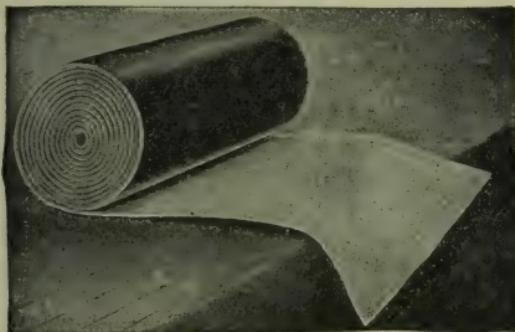
For extreme high pressure and high temperature — a packing for the hard places — one that won't have to be followed up.

Far better than any rubber packing, but not calculated to stand up and do the extreme work of Vanda Black.

| | | | | | |
|--|------|----------------|----------------|----------------|---------------|
| Thickness..... | inch | $\frac{1}{2}$ | $\frac{1}{16}$ | $\frac{3}{32}$ | $\frac{1}{8}$ |
| Approximate weight per square yd., Black..... lbs. | | $2\frac{1}{2}$ | 5 | $7\frac{1}{2}$ | 10 |

| | | | | | |
|-------|-------|----------------|---|-----------------|----|
| " " " | " " " | $3\frac{1}{2}$ | 7 | $10\frac{1}{2}$ | 14 |
|-------|-------|----------------|---|-----------------|----|

"MOBILENE" SHEET PACKING
FOR GAS AND GASOLINE ENGINE CYLINDER HEADS



B3210

Price..... per pound, \$1.50

The peculiar conditions of gas and gasoline engine work have proved that ordinary organic packings are totally unreliable for this purpose.

Furnished in rolls, 250 lbs. each, weight per square yard $4\frac{1}{2}$ lbs., 40 inches wide, standard thickness $\frac{3}{2}$ -inch; other thicknesses if desired.

"KEARSARGE"
ASBESTO-METALLIC SHEET PACKING
For High Pressure Steam and Gasoline Engine Heads



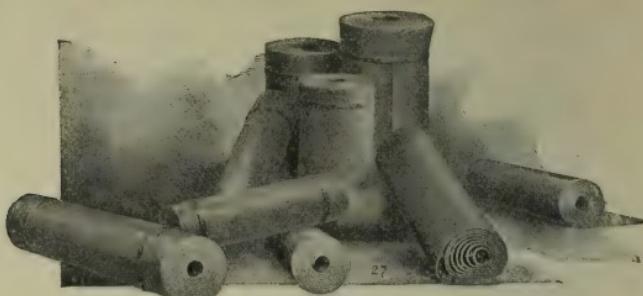
B3211

Price..... per pound, \$1.00

"Kearsarge" Asbesto Metallic Sheet Packing is made from asbestos yarn and strands of fine brass wire, firmly twisted and woven together, and coated with special heat resisting composition. Furnished in rolls, 40 inches wide, 250 lbs. each.

| | | | | | |
|-------------------------------|--------|----------------|----------------|---------------|---------------|
| Approximate Thickness..... | inch | $\frac{3}{2}$ | $\frac{1}{16}$ | $\frac{1}{8}$ | $\frac{3}{4}$ |
| " Weight per square yard..... | pounds | $4\frac{1}{2}$ | 5 | 10 | 18 |

Standard Stock sizes are $\frac{1}{16}$ and $\frac{1}{8}$ inch.

SHEET RUBBER PACKING**B3215**

Made with Rubber both sides, or Cloth both sides, in rolls of about 200 pounds, 36 inches wide. Each thickness of cloth, whether inside or out, counts as one ply.

| Thickness | $\frac{1}{2}$ | $\frac{1}{16}$ | $\frac{3}{2}$ | $\frac{1}{8}$ | $\frac{3}{16}$ | $\frac{1}{4}$ | $\frac{5}{8}$ |
|-----------------------------------|---------------|----------------|-----------------|---------------|------------------|------------------|---------------|
| One Yard Wide | 2 Ply | 2 Ply | 3 Ply | 3 Ply | 4 Ply | 4 Ply | 4 Ply |
| Price per pound | .65 | .63 | .61 | .58 | .58 | .55 | .55 |
| Approximate Weight per Yard | pounds | 3 | 5 $\frac{1}{2}$ | 7 | 11 $\frac{1}{2}$ | 17 $\frac{1}{2}$ | 23 |

PURE SHEET GUM. B3216

Sheet, $\frac{1}{2}$, $\frac{1}{16}$, $\frac{3}{2}$, $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, and $\frac{5}{8}$ inch thick, 36" wide. Per pound, \$1.00.

Approximate weight, 4, 8, 12, 16, 20, 24, and 48 pounds per yard.

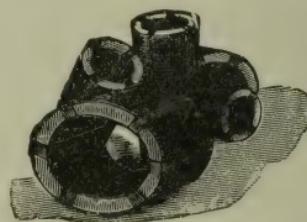
DIAPHRAGM SHEET PACKING. B3217

Insertion is of duck with high grade rubber, 36" wide. Per pound, \$1.50. Specify whether high or low pressure is wanted. Also whether for Steam or for Gas Regulator, and if possible what make of regulator.

**RAINBOW
GASKETS
AND RINGS**

To Order

B3218



**CLOTH
INSERTION
RUBBER
GASKETS**

To Order

B3219

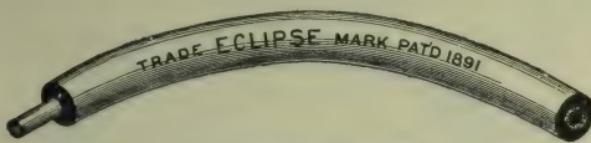
Any size and thickness made to order on short notice.

| Rainbow Plain | | Rainbow Wire Inserted | | Rubber Cloth Insertion or Cloth Both Sides | |
|---------------------------------|------------------|---------------------------------|------------------|--|------------------|
| Thickness Inch | Price Per Lb. | Thickness Inch | Price Per Lb. | Thickness | Price Per Lb. |
| $\frac{1}{2}$ | 1.40 | $\frac{1}{16}$ | 2.50 | $\frac{1}{16}$ inch and less | 1.00 |
| $\frac{1}{16}$ | 1.30 | $\frac{3}{16}$ to $\frac{1}{4}$ | 2.00 | $\frac{1}{16}$ " greater | .70 |
| $\frac{3}{16}$ to $\frac{1}{4}$ | 1.10 | | | | |

**RAINBOW RINGS FOR UNIONS, ICE MACHINES,
PUMPS, ETC. B3220**

| Internal Diameter | $\frac{1}{2}$ and $\frac{1}{16}$ | $\frac{3}{2}$ and $\frac{5}{8}$ | $\frac{1}{16}$ and $\frac{1}{4}$ |
|--------------------------------|----------------------------------|---------------------------------|----------------------------------|
| 1 in. and smaller..... per lb. | 3.00 | 2.50 | 2.20 |
| 1 to 2 in..... " | 2.50 | 2.00 | 1.70 |
| 2 " 3 "" " | 2.00 | 1.50 | 1.20 |

THE ECLIPSE SECTIONAL RAINBOW GASKET

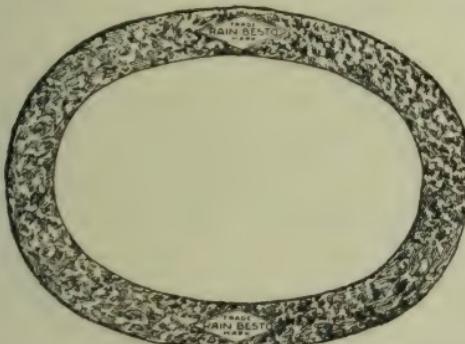
Handhole
PackingManhole
Packing

B3225

Price, $\frac{3}{8}$ inch and larger, per lb., \$1.00. $\frac{1}{4}$ inch per lb., \$2.00.

LENGTH AND WEIGHT PER BOX

| | | | | | |
|----------------------------|--------|---------------------|----------------------------|--------|--------|
| $\frac{1}{4}$ in. diameter | 50 ft. | $1\frac{1}{2}$ lbs. | $\frac{5}{8}$ in. diameter | 24 ft. | 6 lbs. |
| $\frac{3}{8}$ " " | 36 " | $2\frac{3}{4}$ " | $\frac{3}{4}$ " " | 18 ft. | 6 " |
| $\frac{1}{2}$ " " | 36 " | $5\frac{1}{4}$ " | " " | | |

Rain-Besto
CombinationMetallic
Gasket

B3226

Price.....per lb. 1.50

This gasket is made of Rainbow Packing, mixed with long asbestos fibre, and a specially constructed metal insertion.

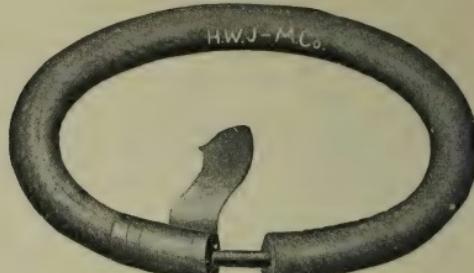
For Steam, Oil, Acid, Ammonia or Sulphur. Joints can be broken daily for a year. For best results use $\frac{1}{16}$ or $\frac{1}{4}$ inch thick.WIZZARD MOULDED GASKETS
B3229

For Superheated and High Pressure Steam. The only Gasket that will successfully stand the action of superheated and high pressure steam.

For Flanges, Valve Bonnets, etc.

Price, per lb., \$1.50.

**THE "KEARSARGE" ASBESTO-METALLIC
TUBULAR GASKET**



B3230

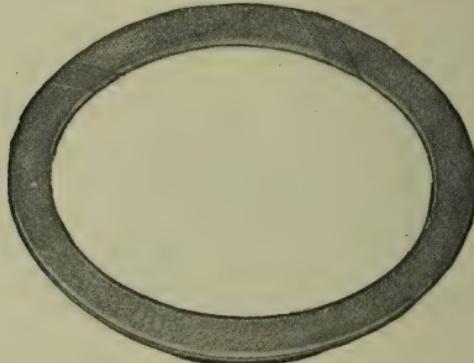
Price..... per lb. 1.50

For High Pressure Steam
LENGTH AND WEIGHT PER BOX

| Diameter | Length | Weight | Diameter | Length | Weight |
|--------------------------------------|----------------|----------------|--------------------------------------|----------------|-----------------|
| $\frac{3}{8}$ in. $\frac{1}{2}$ " | 36 ft. 36 " | 5 lbs. 10 " | $\frac{5}{8}$ in. $\frac{3}{4}$ " | 24 ft. 18 " | 10 lbs. 12 " |

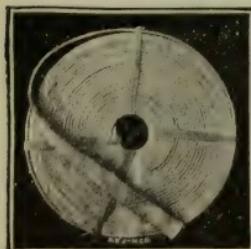
"KEARSARGE" ASBESTO-METALLIC JOINTLESS GASKETS
(Patented)

For Boiler Manholes and Handholes



B3233

Standard Manhole Sizes..... per lb. 1.50
" Handhole " " 2.00



B3234

**"KEARSARGE" ASBESTO-METALLIC
GASKETING TAPE**

This material is furnished braided or folded, from "Kearsarge" Asbesto-Metallic stock, and may be conveniently used as a gasket or packing on large cylinder heads, manhole and handhole plates. Put up in 5 and 10 lb. rolls; $\frac{1}{2}$, $\frac{3}{4}$, 1, and $1\frac{1}{4}$ inch wide.

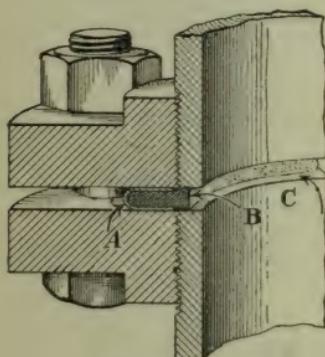
Price, in rolls..... per lb. 1.50

**RUBBER
HOSE WASHERS**

**RUBBER
UNION GASKETS**

B3237

| Size Hose.....inches | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 | $2\frac{1}{2}$ |
|-------------------------|---------------|---------------|---------------|------|----------------|----------------|------|----------------|
| Hose Washers....per 100 | ... | ... | .85 | .90 | 1.30 | 1.40 | 1.50 | 5.00 |
| Union Gaskets.... " | .75 | .80 | .95 | 1.00 | 1.40 | 1.50 | 1.70 | .... |

Hose Washers, $\frac{3}{4}$ and 1 inch, 75c per lb.

B3238

**THE WILCOX
SELF-SEALING GASKET**

Made of asbestos-metallic packing, folded within copper. Having the strength of metal, the elasticity of rubber, and being constructed so that the pressure to which it is exposed automatically expands the gasket and seals the joint, hence the name "Self-sealing Gasket."

How to Order

If a smooth, raised, or corrugated face, give diameter just inside the bolt holes. If a male and female face, give outside diameter of recess in female end. If a tongue and groove face, give outside and inside diameter of groove.

PRICE LIST ROUND GASKETS

| Outside Diam. of Gasket, inch. | 1 $\frac{1}{2}$ & less | 2 | 2 $\frac{1}{2}$ | 3 | 3 $\frac{1}{2}$ | 4 | 4 $\frac{1}{2}$ | 5 | 5 $\frac{1}{2}$ | 6 | 6 $\frac{1}{2}$ | 7 |
|-----------------------------------|------------------------|------|-----------------|------|-----------------|------|------------------|------|-----------------|------|-----------------|-----|
| Price each | .15 | .16 | .17 | .18 | .19 | .20 | .25 | .30 | .35 | .40 | .48 | .55 |
| Outside Diam. of Gasket, inch. | 7 $\frac{1}{2}$ | 8 | 8 $\frac{1}{2}$ | 9 | 9 $\frac{1}{2}$ | 10 | 10 $\frac{1}{2}$ | 11 | 12 | 13 | 14 | |
| Price each | .63 | .70 | .77 | .84 | .91 | .98 | 1.05 | 1.12 | 1.25 | 1.38 | 1.50 | |
| Outside Diam. of Gasket, inch. | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | |
| Price each | 1.60 | 1.70 | 1.81 | 1.89 | 1.97 | 2.05 | 2.13 | 2.21 | 2.29 | 2.37 | 2.45 | |

Between sizes, same price as next larger listed size.

Larger sizes than listed above will be quoted on application.

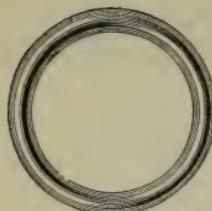
Oval Man-hole or Hand-hole Gaskets quoted on application—Send template.

The following is a list of Gasket diameters for

STANDARD AND EXTRA HEAVY FLANGED FITTINGS

when drilled according to A. S. M. E. Standard Drilling, adopted July 18, 1904, and the Manufacturers Extra Heavy Drilling, adopted Jan. 1, 1902.

| Pipe Size, inch. | 2 | 2 $\frac{1}{2}$ | 3 | 3 $\frac{1}{2}$ | 4 | 4 $\frac{1}{2}$ | 5 | 6 | 7 | 8 | 10 | 12 | 14 | 16 |
|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|-----------------|------------------|------------------|----|------------------|
| Gasket, Stand. " | 4 | 4 $\frac{1}{4}$ | 5 $\frac{1}{4}$ | 6 $\frac{1}{4}$ | 6 $\frac{1}{2}$ | 6 $\frac{1}{2}$ | 7 $\frac{1}{2}$ | 8 $\frac{1}{2}$ | 8 $\frac{1}{2}$ | 9 $\frac{1}{2}$ | 10 $\frac{1}{2}$ | 13 $\frac{1}{4}$ | 16 | 17 $\frac{1}{2}$ |
| " Ex. Hvy " | 4 $\frac{1}{4}$ | 5 | 5 $\frac{1}{2}$ | 6 $\frac{1}{2}$ | 7 | 7 $\frac{1}{2}$ | 8 $\frac{1}{2}$ | 9 $\frac{1}{2}$ | 10 $\frac{1}{2}$ | 12 | 14 $\frac{1}{4}$ | 16 $\frac{1}{4}$ | 19 | 21 $\frac{1}{2}$ |

LEAD GASKETS**AMMONIA GASKETS—B3239**

| Size | inches | $\frac{1}{4}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ |
|------------|--------|---------------|----------------|---------------|----------------|----------------|----------------|
| Each | | .02 | .02 | .02 | .03 | .04 | .05 |
| Size | inches | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | 5 |
| Each | | .06 | .07 | .08 | .08 | .09 | .10 |

BOILER MANHOLE AND HANDHOLE GASKETS—B3240

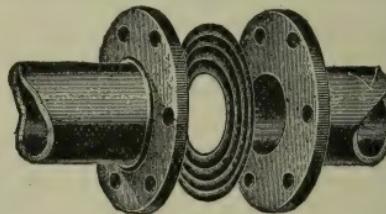
Price Each

For Boilers, Stirling M. H., 50c; B. & W. M. H., 75c; Heine M. H., 75c.
Heine H. H., $3\frac{1}{2}$ in. Rd., 5c; $3\frac{1}{2}$ x $4\frac{1}{2}$ oval, 6c; Erie or Oil City, 4 x 5 in., 8c.
Manhole gaskets are usually oval, or have rounded shoulders on ends.

LEAD UNION GASKETS—B3241

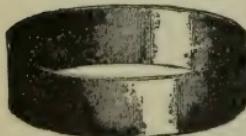
| Pipe Size..... | inches | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|----------------|--------|---------------|---------------|---------------|---------------|-----|----------------|----------------|------|
| Per 100 | | .55 | .55 | .60 | .65 | .70 | .85 | 1.00 | 1.35 |

Always state inside and outside diameters, as different makes of unions vary.

CORRUGATED COPPER GASKETS

B3242

For Flanged Fittings. See B426, this catalogue.
Also made in sizes fitting Lip Unions, and Flange Unions.
Prices quoted on application.

PLAIN FERRULE

B3250

***FLANGED FERRULE**

B3251

COPPER FERRULES

For Boiler Tubes

| O. Diam. of Tube.. in. | $1\frac{1}{4}$ | $1\frac{1}{2}$ | $1\frac{3}{4}$ | 2 | $2\frac{1}{4}$ | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | 4 |
|---------------------------------|----------------|----------------|----------------|---------------|----------------|----------------|---------------|----------------|-------|----------------|
| Length of Ferrule, in. | $\frac{5}{8}$ | $\frac{5}{8}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{3}{4}$ | $\frac{3}{4}$ | $\frac{3}{4}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ |
| $\frac{1}{8}$ inch Thick Copper | 10.50 | 11.00 | 11.50 | 13.00 | 17.00 | 19.00 | 23.00 | 29.00 | 35.00 | 36.00 |
| $\frac{3}{2}$ " " | 6.50 | 7.00 | 7.50 | 9.00 | 11.00 | 13.00 | 16.00 | 23.00 | 28.00 | 29.00 |

*Flanged Pattern is special, made to order only. Add to list of Plain Ferrules, \$2.00 per 100. Can be furnished in various thicknesses, from $\frac{1}{2}$ to $\frac{3}{8}$ inch, and from $\frac{1}{2}$ inch to $1\frac{1}{4}$ inch long, at special prices.

EUREKA GUM CORE PISTON PACKING

B3257

Price.....per lb. .80

For Cold and Hot Water and Low Pressure Steam Piston Rod purposes. Especially constructed for use on scored rods. All sizes from $\frac{1}{4}$ to 1 inch, by sixteenths, and put up in boxes weighing approximately 5 pounds.

**XLNT. LUBRICATED ROUND GUM CORE
PISTON PACKING**

B3258

Sizes..... $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$ and 1 inch, Round
Price.....per lb. .50

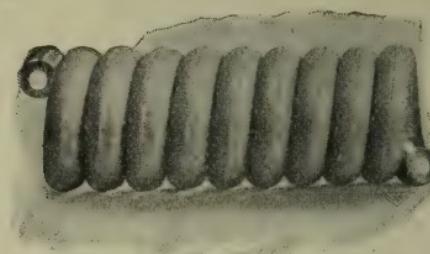
Put up in 5 and 10 pound boxes, or in coils weighing 25, 50 or 100 pounds.

SELDEN'S PATENT PISTON PACKING

B3259

| | |
|--|-------------|
| With Rubber Core, in sizes of $\frac{1}{4}$ inch and larger..... | per lb. .80 |
| With Canvas " " " $\frac{1}{4}$ " " " " | " " .60 |
| Square..... " " $\frac{1}{2}$ " " " " | " " 1.00 |

**PEERLESS SPIRAL STEAM PISTON AND VALVE
ROD PACKING**



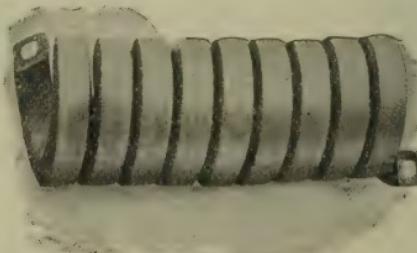
B3260

$\frac{1}{4}$ in. to $2\frac{1}{2}$ in., per lb., \$1.00. $\frac{1}{8}$ and $\frac{3}{16}$ in., per lb., \$2.00.

Carried in Hard for High Pressure and Soft for Low Pressure.
Put up in paper boxes, weights and lengths as follows:

| Diameter Inches | Contents Feet | Weight Lbs. | Diameter Inches | Contents Feet | Weight Lbs. |
|--------------------|------------------|----------------|--------------------|------------------|----------------|
| $\frac{3}{16}$ | 105 | $1\frac{1}{2}$ | $\frac{13}{16}$ | 24 | 7 |
| $\frac{1}{4}$ | 84 | $3\frac{1}{4}$ | $\frac{7}{8}$ | 24 | $7\frac{3}{4}$ |
| $\frac{5}{16}$ | 72 | $3\frac{3}{4}$ | $\frac{15}{16}$ | 24 | 9 |
| $\frac{3}{8}$ | 72 | $4\frac{1}{2}$ | 1 | 24 | 10 |
| $\frac{7}{16}$ | 60 | 5 | $1\frac{1}{16}$ | 12 | $5\frac{1}{2}$ |
| $\frac{1}{2}$ | 36 | 4 | $1\frac{1}{8}$ | 12 | $5\frac{3}{4}$ |
| $\frac{9}{16}$ | 36 | 5 | $1\frac{3}{16}$ | 12 | $6\frac{1}{4}$ |
| $\frac{5}{8}$ | 36 | 7 | $1\frac{1}{4}$ | 12 | $7\frac{1}{4}$ |
| $\frac{11}{16}$ | 24 | 5 | $1\frac{5}{16}$ | 12 | $8\frac{1}{4}$ |
| $\frac{3}{4}$ | 24 | $5\frac{3}{4}$ | $1\frac{3}{8}$ | 12 | 9 |

PEERLESS SQUARE SPIRAL STEAM PISTON AND VALVE ROD PACKING



B3261

Put up same as above and made in all sizes from $\frac{1}{4}$ to 2 inches.
This packing should be cut into Rings when placed in stuffing box.

WIZARD BRAIDED WICKING

B3263

For Superheated and High Pressure Steam

Price, per lb., \$2.00.

Made round or square. Especially useful for packing small valve stems. Put up in one, three, and five pound reels. Sizes, $\frac{1}{16}$ in., $\frac{1}{4}$ in., $\frac{5}{16}$ in., $\frac{3}{8}$ in.

HERCULES COMBINATION**Metallic Stop Valve Packing**

B3265

Price, per lb., \$2.50.

We can furnish this packing in spiral form and in rings. Spiral is put up in boxes, weights and lengths as follows:

| Diameter..... | inches | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ |
|----------------|--------|-----------------|-----------------|-----------------|-----------------|---------------|
| Contents | feet | 24 | 24 | 12 | 12 | 6 |
| Weight | pounds | 1 $\frac{3}{4}$ | 3 $\frac{1}{4}$ | 2 $\frac{3}{4}$ | 4 $\frac{1}{4}$ | 3 |

DALE'S HIGH PRESSURE AUTOMATIC STEAM TRAP PACKING

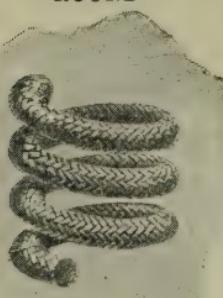
B3268

Price, per lb., \$2.50.

Put up in boxes containing 24 feet; $\frac{1}{4}$ inch weighs $1\frac{3}{4}$ lbs., $\frac{3}{8}$ inch weighs $3\frac{1}{4}$ lbs. Extra sizes made to order.

This packing is made expressly for steam traps, and will last a long time under exceedingly high pressure without sticking or blowing out, and remains at all times in perfect condition.

It is made solely and expressly for this purpose.

PALMETTO STEAM PISTON PACKING**ROUND****SQUARE**

Will not wear or
score rods
Holds lubricant until
worn out

**B3270**

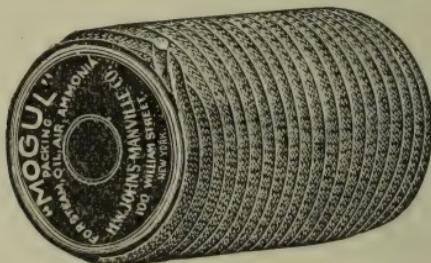
Made of Pure Asbestos, specially lubricated, in sizes ranging from $\frac{1}{4}$ to 2 inch. From $\frac{1}{4}$ to $\frac{1}{2}$ inclusive is put up in two and five pound boxes, $\frac{1}{2}$ -inch and larger in boxes containing five or six pounds.

Round or Square per pound 1.00

B3271**PALMETTO VALVE STEM TWIST PACKING**

For small valve stems and a variety of uses in the engine and boiler room. Made in $\frac{1}{8}$, $\frac{3}{16}$, and $\frac{1}{4}$ inch sizes and put up on one-pound spools.

Price per pound 2.00

"MOGUL" PACKING FOR SMALL VALVE STEMS**B3275**

Price per pound 1.00

Put up in $\frac{1}{8}$, $\frac{3}{16}$, and $\frac{1}{4}$ inch on 1-lb. spool. $\frac{5}{8}$ -inch size also put up on 5-lb. spools and recommended for a high-grade general purpose piston packing. This Packing is made in twisted form from strands of absolutely pure, long fiber, Asbestos Yarn, each strand thoroughly lubricated.

**B3279****VULCABESTON
PISTON PACKING**

Price per pound 1.25

Similar to Mogul, having same material braided making it more firm. $\frac{1}{16}$, $\frac{1}{8}$, $\frac{3}{16}$, and $\frac{1}{4}$ inch on one-pound spools. Larger sizes on five-pound reels.

"KEARSARGE" SPIRAL PACKING
For Piston Rods and Valve Stems



B3280

Per Pound..... 1.50

This packing is made of pure Asbestos and Rubber with an expansion rubber back or core, and with wire insertion for extreme high pressure.

Put up one coil to a box, from $\frac{1}{16}$ to $1\frac{1}{4}$ inch sizes.

REGULAR

B3281

Per Pound..... 1.00

For steam pressures of 100 pounds and less; ordinary water pressures, warm or cold; low ammonia pressures, valves, stems, etc.

Half-inch and smaller put up in boxes containing from 20 to 50 feet and weighing about 5 pounds. Larger sizes about 12 feet to the box and weighing from 7 to 10 pounds per box.

REGULAR
Style No. 184



B3283

Per Pound..... 1.50 Per Pound..... 1.75

Made in all sizes to order, and shipped from factory only; put up in 5 and 10 lb. boxes.

When ordering rings, always state style and give diameter of piston rod, also inside diameter of stuffing box.

SPECIAL

B3282

Per Pound..... 1.25

For steam pressures from 100 pounds up to 250 pounds; high ammonia pressures; high hydraulics; very hot water, air pumps, valve stems, etc.

SPECIAL
Style No. 185



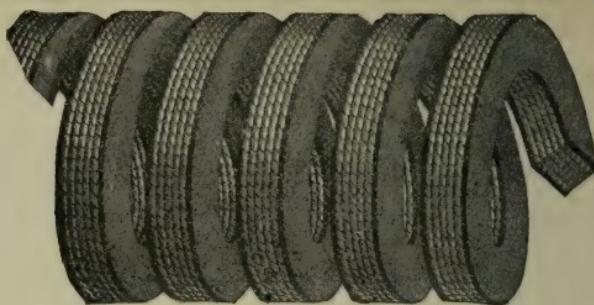
B3284

**P. P. P.
RINGS**

ENGINEERS' FRIEND SPIRAL PISTON PACKING

Steam
and
Ammonia

Hot
and Cold
Water



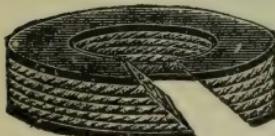
B3285

Price per lb. 1.20

A 12-foot strip in each box, weighs as follows:

| | | | | | | | | | | |
|-----------|----------------|-----------------|----------------|-----------------|----------------|-----------------|----------------|-----------------|-----------------|-----------------|
| Inch..... | $\frac{1}{8}$ | $\frac{3}{16}$ | $\frac{1}{4}$ | $\frac{5}{16}$ | $\frac{3}{8}$ | $\frac{7}{16}$ | $\frac{1}{2}$ | $\frac{9}{16}$ | $\frac{5}{8}$ | $\frac{11}{16}$ |
| Lbs. | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{2}$ | $1\frac{7}{8}$ | $2\frac{1}{4}$ | 3 | $3\frac{1}{2}$ | 4 |
| Inch..... | $\frac{3}{4}$ | $\frac{13}{16}$ | $\frac{7}{8}$ | $\frac{15}{16}$ | 1 | $1\frac{1}{16}$ | $1\frac{1}{8}$ | $1\frac{3}{16}$ | $1\frac{1}{4}$ | .... |
| Lbs. | $5\frac{1}{4}$ | $5\frac{1}{2}$ | $6\frac{1}{2}$ | $7\frac{1}{4}$ | $8\frac{1}{2}$ | 9 | 10 | $10\frac{1}{2}$ | $11\frac{1}{2}$ | .... |

Larger sizes furnished to order.

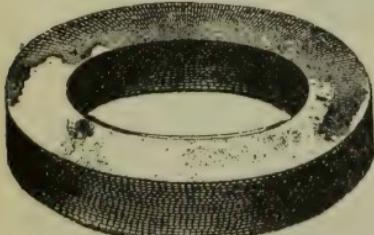
ELASTIC RING

B3286

Price per lb. 1.50

Made to order and shipped from factory only.

State if for Steam, Hot Water, Cold Water, or Ammonia. In ordering state size of rod, also inside diameter of stuffing-box.



B3286

ARCTIC AMMONIA PACKING

Price (Rings are made to order) per lb. 2.00

This packing is specially constructed for ice machine service, being made of layers of rubber and plies of duck so arranged and laid as to best resist the actions of ammonia, cold, and heat. When ordering rings, give diameter of rod, also inside diameter of stuffing-box.

SECTIONAL RING

B3287

Per pound 2.00

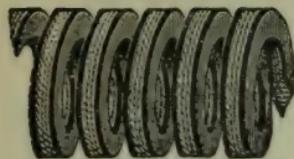
For Hot or Cold Water Pump Cylinder and inside-packed Plunger Pumps. When ordering rings be sure to state exact sizes, giving diameter of rod and inside diameter of stuffing-box.



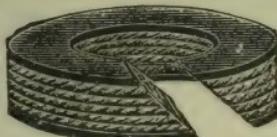
B3289

GARLOCK PISTON PACKINGS

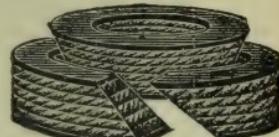
Low Pressure for 80 Pounds Steam or Less

SPIRAL, No. 15

B3290

ELASTIC RING, No. 5 SECTIONAL RING, No. 10

B3291



B3292

Per Pound 1.20 Per Pound 1.50 Per Pound 1.50

Spiral in 12 ft. length, packed in paper box, approximate weight as follows:

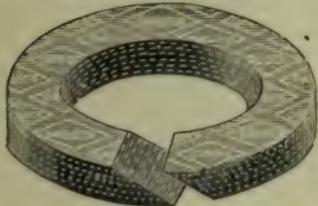
Inches... $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{9}{16}$, $\frac{5}{8}$, $\frac{11}{16}$, $\frac{3}{4}$, $\frac{13}{16}$, $\frac{7}{8}$, $\frac{15}{16}$, 1, $1\frac{1}{16}$, $1\frac{1}{8}$, $1\frac{3}{16}$, $1\frac{1}{4}$
Pounds... $\frac{1}{8}$, $\frac{1}{2}$, $\frac{3}{8}$, 1, $1\frac{1}{2}$, $1\frac{3}{8}$, $2\frac{1}{2}$, 3, $3\frac{1}{4}$, 4, $5\frac{1}{4}$, $5\frac{1}{2}$, $6\frac{1}{2}$, $7\frac{1}{4}$, $8\frac{1}{2}$, 9, 10, $10\frac{1}{2}$, $11\frac{1}{2}$

In ordering Spiral Packing, give the exact space between rod and stuffing box.

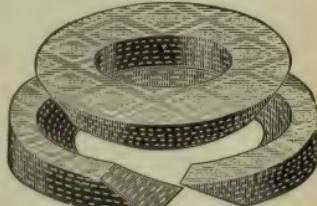
Rings are made to order, state diameter of rod, also inside diameter of stuffing box.

GARLOCK "EXTRA" PACKINGS

For Steam, 100 Pounds or Less—Also Made for Ammonia

ELASTIC RINGSSteam, No. 333
Ammonia, No. 334

B3295

SECTIONAL RINGSSteam, No. 336
Ammonia, No. 337

B3296

Made to order only.

Per Pound 1.60

SPIRAL, No. 777, for Steam to 100 Pounds per lb. 1.60

" 778, for Ammonia " 1.60

Packed 12 ft. coil in a paper box, weight approximately same as above.

GARLOCK "HIGH PRESSURE" PACKING—B3297

For Steam Pressures Over 100 Pounds—Also Made for Air Compressors

Made in Ring or Spiral Form, Also in Coils

Per Pound 2.00

Spiral, Steam, No. 150 Air, No. 221

Coil " 125 " 220

Ring " 200 " 222

The Spiral is in 12 ft. lengths, in paper box weighing approximately one-fourth heavier than table at top of page.

GARLOCK—B3298**ALABASTINE PACKING, No. 17**

For Small Pistons and Boxes and Valve Stems

Sizes, Inch, $\frac{1}{16}$, $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, and $\frac{1}{2}$.

Put up on Small Spools per lb., 1.50



B3297

PEERLESS RING PACKING**STYLE 1**

B3300

STYLE 2

B3301

STYLE 3

B3304

STYLE 4

B3305

Made to order only for factory shipment.

The above cuts represent the different forms in which we can furnish Peerless Piston and Valve Rod Packing, with and without the core of Rainbow Packing Compound. Style No. 2 is furnished only when the rim of the packing is wide enough to allow sufficient body to the ring; if not, style No. 1 is sent.

Price per lb., \$2.00

PEERLESS EXPANSION RING PACKING

With Cushion Core made from the Celebrated Rainbow Packing.



B3306

Price per lb. \$1.50

Will stand extra high, steam pressure.

WIZARD PACKING RINGS

For Superheated and High Pressure Steam



B3307

Price per lb. \$2.00

Made to order only.

Moulded in concave and convex form in sets of two.

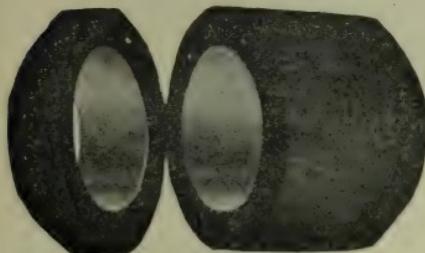
To insure easy adjustment and to avoid undue friction on valve stem a special lubricating compound is incorporated throughout this packing during process of manufacture.

"SAFETY" PLASTIC METALLIC PACKING

For Steam, Water, Air, Gas, Hydraulic Machines, Pumps, Valves, etc.

This ring shows how the packing looks when compressed in a stuffing box, it being formed by pressure of gland.

The packing in bulk form may be used conveniently on the lower end of vertical machines. For all other places the tubes should be used.



B3310



Put up in thin cotton tubes, or in bulk in metal packages of 12, 25, 50, 100 lbs. each
Price, \$1.00 per lb.

"JUPITER" METALLIC—B3311

Price, per pound, \$1.50.

Similar to above and carried in stock as follows:

| Size | Size of Package | Size | Size of Package |
|---------------|-----------------|---------------|-----------------|
| $\frac{3}{8}$ | 5-lb. Pail | $\frac{3}{4}$ | 10-lb. Pail |
| $\frac{1}{2}$ | 5-lb. " | $\frac{7}{8}$ | 10-lb. " |
| $\frac{5}{8}$ | 5-lb. " | 1 | 10-lb. " |

**"VULCABESTON"
CONCAVE AND CONVEX THROTTLE RINGS**

For Throttle Stems Against Superheated Steam



B3312

Prices upon application

"DOLLAR" PACKING

For Steam, Water, and Air

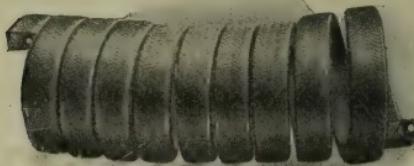
Is a combination of braided flax and Sea Island cotton duck in alternate plies upon the piston rod, the whole being supported by a rubber cushion that will not harden in heat, placed behind the wearing surface.

Made in Coils, 15 feet long. Sizes from $\frac{1}{4}$ in. to 2 in. varying by $\frac{1}{16}$ th.

Each Coil boxed separately.....Per lb., net, 1.00.

SUCCESS PACKING

For Steam, Hot or Cold Water, or Ammonia.

**B3315**

Price..... Per pound 1.00

Also in $\frac{1}{16}$ th sizes.

| Diameter..... inch | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{7}{8}$ | 1 |
|------------------------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Contents of Box. ft. | 25 | 25 | $12\frac{1}{2}$ | $12\frac{1}{2}$ | $12\frac{1}{2}$ | $12\frac{1}{2}$ | $12\frac{1}{2}$ |
| Weight. lbs. | $3\frac{3}{4}$ | $5\frac{1}{2}$ | $4\frac{1}{2}$ | $7\frac{1}{4}$ | $8\frac{1}{2}$ | $10\frac{1}{2}$ | 13 |

Made in sizes up to 3 inch.

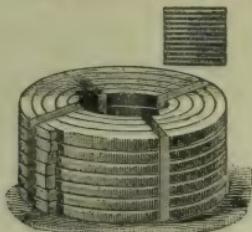
This is semi-metallic diagonal expansion spiral packing rainbow core.

The Upper Section of this packing is composed of Solid Braided Cotton Strands with Rainbow Packing Core and Soft Metallic Corners, finished to oblong shape by hydraulic pressure. By braiding the strands, the fibre never separates under the severest pressure.

PEERLESS NO. 6 HOT WATER PUMP PACKING**B3316**

Price..... Per pound 1.50

This packing is especially prepared for packing the hot water end of pumps. The shape and the position in which the Rainbow core is placed keep the packing against the plunger and at all times insure a tight joint.

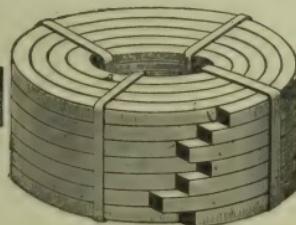
SQUARE DUCK PACKING

B3318

Square Duck Packing per lb. \$.40

Used on cold water end of pump.

Made of alternate layers of duck and rubber in 12 foot lengths, $\frac{1}{4}$ to $1\frac{1}{4}$ inch square by $\frac{1}{8}$ th. Can furnish intermediate $\frac{1}{16}$ ths, factory shipment.

HYDRAULIC PACKING

B3319

Hydraulic Square Packing per lb. \$.80

Made in 12 ft. lengths, $\frac{1}{4}$ inch to $1\frac{1}{4}$ inches, in $\frac{1}{16}$ th sizes. Is a High Grade Packing, having a finer quality Duck and better grade Rubber than ordinary Square Duck Packing.

PEERLESS SPECIAL CANVAS PUMP PACKING

For Cold or Hot Water



B3320

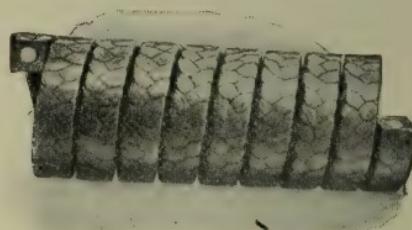
Price, per lb., \$1.00.

Rock Hard Grade, made especially for **Very Hot Water**, per lb., \$1.00.

Made in $\frac{1}{16}$ sizes $\frac{1}{4}$ inch and larger.

Is a high-grade Pump Packing, made on same principles as the regular Hydraulic, difference being in the quality of duck used, as well as a white friction.

"HONEST JOHN"
HYDRAULIC RAINBOW CORE PACKING



B3324

Price..... Per pound 1.00

| Diameter..... | inch | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | $\frac{7}{8}$ | 1 |
|----------------------|------|-----------------|-----------------|-----------------|---------------|-----------------|-----------------|-----------------|
| Contents of Box..... | ft. | 48 | 48 | 56 | 29 | 30 | 16 | 16 |
| Weight..... | lbs. | 3 $\frac{1}{2}$ | 4 $\frac{1}{8}$ | 6 $\frac{1}{4}$ | 6 | 7 $\frac{3}{4}$ | 7 $\frac{1}{2}$ | 7 $\frac{3}{4}$ |

We can furnish this straight, in spiral form, and in rings.

RAWHIDE HYDRAULIC PACKING



B3326

Made of four strips of rawhide braided square, used for Waterworks and Hydraulic Pumps.

$\frac{1}{4}$ to 2 inch..... per lb. \$2.00



OAKUM

B3328

In 50 lb. bales..... per bale \$5.00

SQUARE BRAIDED FLAX PACKING

As a Cold Water Packing it has no superior. Made of Pure Long Fibre Flax. Carried in stock up to $1\frac{1}{4}$ -inch by $\frac{1}{16}$ th, can be furnished, however, any size to 2 inch.

PEERLESS SQUARE BRAIDED FLAX PACKING

B3331

Price..... per lb. .60

| | | | | | | | | | |
|---------------------|-------------|-----------------|----------------|-----------------|-----------------|----------------|-----------------|----------------|---------------|
| Diameter..... | inch | $\frac{3}{16}$ | $\frac{1}{4}$ | $\frac{5}{16}$ | $\frac{3}{8}$ | $\frac{7}{16}$ | $\frac{1}{2}$ | $\frac{9}{16}$ | $\frac{5}{8}$ |
| Feet per box | approx. | 160 | 160 | 125 | 92 | 75 | $49\frac{1}{2}$ | 47 | 45 |
| Weight per box..... | approx. lb. | $5\frac{1}{2}$ | $5\frac{1}{2}$ | 6 | $6\frac{1}{2}$ | 7 | $7\frac{1}{4}$ | 9 | 9 |
| Diameter..... | inch | $\frac{11}{16}$ | $\frac{3}{4}$ | $\frac{7}{8}$ | $\frac{15}{16}$ | 1 | $1\frac{1}{8}$ | $1\frac{1}{4}$ | .... |
| Feet per box | approx. | 32 | 24 | $21\frac{1}{2}$ | 23 | 18 | 15 | 33 | .... |
| Weight per box..... | approx. lb. | 8 | 7 | $8\frac{5}{8}$ | .... | $9\frac{5}{8}$ | 12 | 25 | .... |

RELIABLE SQUARE BRAIDED FLAX PACKING

B3333

Sizes $\frac{1}{4}$ in. to 1 in., by $\frac{1}{16}$ ths..... per lb., .40

TUPPER'S SQUARE BRAIDED FLAX PACKING, per lb., \$1.00

HEMP



PACKING

B3340

Italian Hemp Packing in reels of 25 and 50 pounds..... per lb. .25

American " " " 25 " 50 " " ".16

" " " Tallowed, in reels of 25 pounds..... " ".20

Jute Packing, in reels of 50 pounds..... " ".12

RUBBER PUMP VALVES



B3360

Price per lb., \$1.00

Style No. 154

Red Condenser valve; very light weight; tough and elastic.

Style No. 152

Red or Gray Condenser valve; light weight; durable and flexible.

Style No. 108

Hard valve; for hot water up to 300 pounds pressure, and 200° to 300° temperature. Also for acids, syrups, oils, etc.

Style No. 129

Hard valve for hot water up to 200 pounds pressure, and 200° temperature.

Style No. 188

Hard valve for cold water; 50 to 400 pounds pressure, or warm water up to 100 pounds pressure; not over 120° temperature.

Style No. 254

Medium hard valve; for cold, gritty water up to 500 pounds pressure.

Style No. 175

Medium hard valve for cold water for mines and waterworks in pumping water in lifts of 1,000 feet or more and against a pressure of 500 pounds.

Style No. 182

Medium hard valve; for cold water, 150 to 400 pounds pressure.

Style No. 139

Medium soft valve for cold water 150 pounds pressure; or warm water to 180° temperature.

Style No. 149

Soft valve for cold water, 0 to 100 pounds pressure; or warm water to 100° temperature.

JENKINS BROS. PUMP VALVES

B3361

Valves above 2 inches in diameter per lb. 1.00
Valves 2 inches in diameter and less " 1.50

Schedule of Principal Compounds and Service for Which They are Guaranteed

No. 80 Compound

Hot Water Valve, for pressures up to 250 pounds, temperature not less than 180 degrees, nor more than 300 degrees. For Air Compressors, for oils, naphtha, syrups, beer, mild acids and other destructive fluids.

No. 88 Compound

For warm water up to 100 pounds pressure; cold water 50 to 400 pounds pressure.

For mining and high pressure or elevator service, where the water is often slightly oily.

No. 93 Compound

Cold Water Valve, for pressures up to 150 pounds; or 100 pounds pressure to 180 degrees.

No. 94 Compound

Cold Water Valve for pressures to 100 pounds.

No. 15 Compound

For Cold Water Pressure up to 75 pounds, and for Condenser Air Pumps, etc.

RUBBER AND
COMPOSITION
BIBB DISCS

B3365

RUBBER
FULLER BALLS

B3366

RUBBER
VALVE BALL

B3367

| Size of Bibb Cock..... | inch | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ | $\frac{3}{4}$ | 1 |
|---|------|---------------|---------------|---------------|---------------|------|
| Composition Bibb Washers, per 100 | | .75 | .75 | .80 | 1.00 | 1.00 |
| " Boss " " 100 | | 1.00 | 1.00 | 1.00 | 1.50 | 1.50 |
| Rubber Fuller Balls, " 100 | | 2.00 | 2.00 | 3.00 | 4.00 | .... |
| Red " " 100 | | | 3.00 | 4.50 | 6.00 | .... |

Bibb Discs and Balls are made for Cold Water, also for Hot Water.

RUBBER VALVE BALLS

| Diameter.....Inches | $\frac{3}{4}$ | 1 | $1\frac{1}{8}$ | $1\frac{1}{4}$ | $1\frac{3}{8}$ | $1\frac{1}{2}$ | $1\frac{5}{8}$ | $1\frac{1}{4}$ | $1\frac{7}{8}$ | 2 |
|---------------------|---------------|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------|
| Per Dozen..... | .80 | 1.00 | 1.40 | 1.90 | 2.50 | 3.25 | 4.00 | 4.75 | 5.50 | 6.50 |

Can furnish up to 8 inches in diameter. Prices upon application.

LOW PRESSURE
DIAPHRAGM

B3370

HIGH PRESSURE
DIAPHRAGM

B3371

PUMP
DIAPHRAGM

B3372

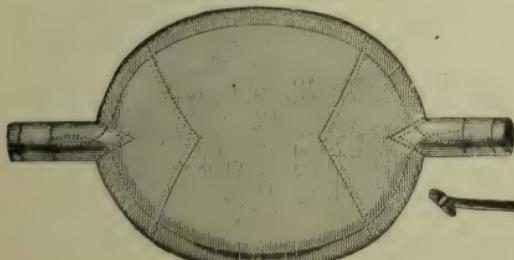
RUBBER DIAPHRAGMS

| Diameter..... | inches | $6\frac{3}{4}$ | 8 | 9 | $9\frac{1}{2}$ | $11\frac{3}{4}$ | 15 |
|--------------------------------------|--------|----------------|------|------|----------------|-----------------|------|
| Price, Low-Pressure Diaphragms | each | .. | 1.00 | 1.00 | 1.10 | .. | .. |
| " High " " | " | .55 | .. | .85 | .. | 1.45 | 2.65 |

DIAPHRAGMS FOR "EDSON" AND LOUD PUMPS

| | No. 1 | No. 2 | No. 3 | No. 4 | |
|-----------------|-------|-------|-------|-------|------|
| " Edson " | each | .. | 2.00 | 3.00 | .. |
| " Loud " | " | 2.00 | 3.00 | .. | 4.00 |

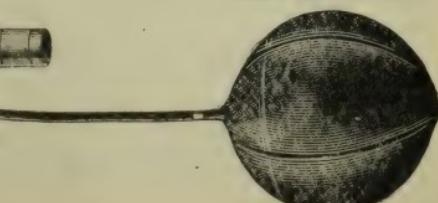
GAS ENGINE BAG



B3375

Prices on application.

GAS MAIN BAG



B3376

ASBESTOS PACKING**ASBESTOS WICK**

B3400

ASBESTOS ROPE

B3401

Price, per lb. \$0.50

Price, per lb. \$0.50

Size $\frac{1}{2}$ in. to $1\frac{1}{4}$ in. by $\frac{1}{8}$ th.Put up in $\frac{1}{4}$, $\frac{1}{2}$ and 1 lb. balls.

Put up on reels.



B3402

CANDLE WICKING

In sacks weighing 5 pounds. About 8 balls to the pound

Price, per lb. \$0.30



B3403

COTTON WASTE

| Number | 1 | 2 |
|--|-----|------|
| Price, White (In 50 and 100 lb. bales) per pound | .20 | .15 |
| " Colored " " " " | .15 | .12 |
| " Cream, Furniture " " " " | .25 | .... |

WOOL WASTE

| | | |
|---------------------------|-----------|-----|
| Price (50 lb. bales)..... | per pound | .20 |
|---------------------------|-----------|-----|

CLEAN WIPING RAGS

| | | |
|---------------------------------------|-----------|-----|
| Price, White (In 100 lb. bales) | per pound | .20 |
| " Colored " " " " | " | .15 |

ASBESTOS MILL BOARD**B3404**

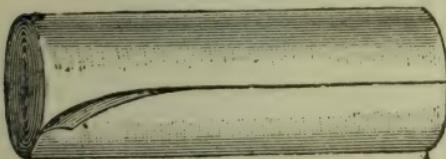
| | |
|------------------------------|---------------|
| Price..... | per pound .10 |
| " in case lots, 250 lbs..... | " .07 |

Approximate weight per sheet, 40x40 inches. (Special sizes cut to order.)

| Thickness..inch | $\frac{1}{2}$ | $\frac{3}{4}$ | $\frac{1}{6}$ | $\frac{3}{2}$ | $\frac{1}{8}$ |
|-------------------|------------------------|--------------------------------------|----------------------------------|----------------------|----------------------|
| Lbs. per Sheet... | 2 to $2\frac{1}{2}$ | 3 to $3\frac{1}{2}$ | $3\frac{1}{4}$ to $4\frac{1}{4}$ | 5 $\frac{1}{2}$ to 6 | 7 $\frac{1}{2}$ to 8 |
| Thickness..inch | $\frac{3}{6}$ | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | ..... |
| Lbs. per Sheet... | 11 $\frac{1}{2}$ to 12 | 13 $\frac{1}{2}$ to 14 $\frac{1}{2}$ | 23 to 25 | 27 to 30 | ..... |

Medium is regular. It is also made hard or soft.

Our Mill Board is fire and acid proof, and is valuable for packing joints in contact with fire and oils. It is also used for fire screens, partitions, ceilings, and linings for ranges, stoves, grates, gas backs.

**ASBESTOS PAPER****B3405**

This is a fire-proof sheathing largely used for lining weatherboards, partitions, etc., also used extensively for wrapping hot air furnace pipes. Thirty-six inches wide in three thicknesses, as follows:

| | |
|-----------|---|
| Thin..... | 6 lbs. to 100 sq. ft., or 1,300 to 1,600 sq. ft. to roll. |
| Medium.. | 10 " 100 " " 800 " 1,000 " |
| Heavy.... | 14 " 100 " " 500 " 700 " |

ASBESTOS ROLL MILL BOARD—B3406

Put up in Rolls 36 inches wide, containing 50 lbs. or 100 lbs.

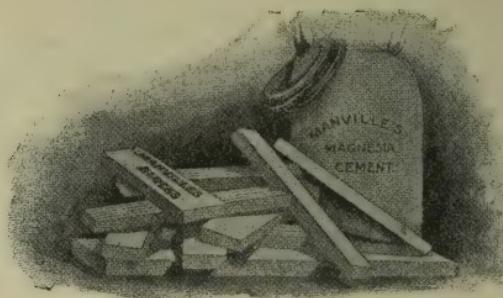
| | |
|---|---------------|
| $\frac{1}{2}$ -inch or $\frac{1}{6}$ -inch thick..... | per pound .09 |
| " full roll..... | .06 |
| $\frac{3}{2}$ -inch or $\frac{1}{8}$ -inch thick..... | " .10 |
| " full roll..... | .07 |

Approximate weight per 100 sq. ft.: $\frac{1}{2}$ =16 lb. $\frac{1}{6}$ =35 lb. $\frac{3}{2}$ =45 lb. $\frac{1}{8}$ =65 lb.
Special widths can be made to order.

ASBESTOS ROLL FIRE FELT—B3407

In Rolls 300 square feet, 36 inches wide. This is a fire-proof Felt composed entirely of Asbestos. Used for lagging boilers of locomotives and high-pressure steam-heating apparatus.

| Thickness..... | inches | $\frac{3}{2}$ | $\frac{1}{8}$ | $\frac{1}{4}$ |
|----------------|-----------------|---------------|---------------|---------------|
| Price..... | per square foot | .06 | .08 | .12 |

BLOCK AND CEMENT COVERINGS**ASBESTOS CEMENT—B3408**

Per Bag \$2.50

This is composed of Asbestos Fiber, Infusorial Earth, and a Cementing Compound. It is applied with a trowel to steam pipes, boilers, etc., while heated. It is recommended for all steam heated surfaces; furnished in bags dry. One bag contains sufficient material for covering about 30 square feet 1 inch thick.

85% CARBONATE OF MAGNESIA CEMENT—B3409

Per bag of 60 lbs.

| | |
|--------------------------|------|
| 85% Magnesia Cement..... | 7.50 |
| Magno Cement..... | 6.00 |

A compound of Carbonate of Magnesia and Asbestos Fibres.

Used for insulating heated surfaces. Especially recommended for irregular surfaces and fittings where it is impossible to apply either sectional pipe covering or blocks.

SHEEP WOOL CEMENT—B3410

| | |
|--|------|
| No. 1 Finishing, per sack of about 115 pounds | 3.75 |
| No. 2 Scratch Coat, per sack of about 90 pounds..... | 3.75 |

Mode of Application

This material is applied directly to the pipes, boiler, or other surface, in plastic state, wound spirally with strong muslin, and in a few hours dries into a tough, compact mass.

85% MAGNESIA BLOCKS—B3411

These are made from the same material as the 85% Magnesia Covering, 6 inches by 36 inches or 3 inches by 18 inches from and including 1 inch to 3 inches thick and are highly recommended for boilers or other steam heated surfaces.

See price list B3426.

ASBESTOS MOULDED BLOCKS—B3412

These blocks are intended for covering boilers or other large surfaces and are furnished 4 inches by 18 inches from and including 1½ inches to 3 inches thick. They are made from the same material as Asbestos Moulded Covering.

See price list B3426.

ASBESTOS SPONGE MOULDED COVERING

For Medium Pressure Steam Pipes

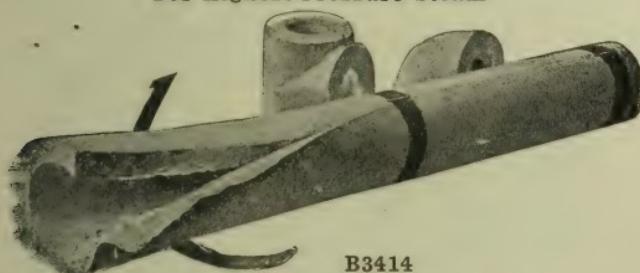


B3413

This is a moulded covering, absolutely fireproof, durable and tough. Made to fit standard pipe. $\frac{1}{2}$ -inch to 12-inch diameter, with canvas jacket and bands. Price list, see B3425.

ASBESTO-SPONGE FELTED

For Highest-Pressure Steam



B3414

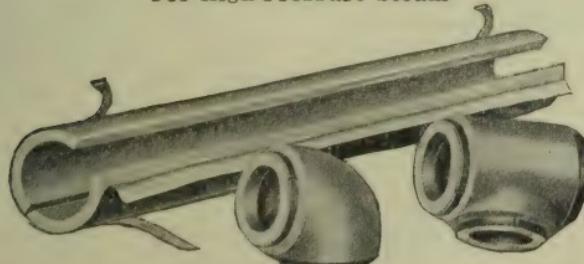
Made in sectional form, with a number of laminations of a thin felt, manufactured from pure, long-fibered Asbestos and a small quantity of granulated sponge, producing innumerable air cells. As it is very elastic, it is especially valuable where there is danger from motion and vibration. It is adapted for the highest steam pressure.

Has canvas jacket and straps.

Price list see B3425.

85 PER CENT MAGNESIA COVERING

For High-Pressure Steam



B3415

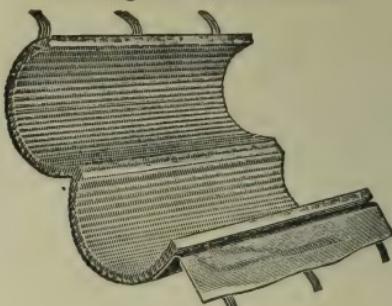
Carbonate of Magnesia combined with Asbestos Fibre is well known as an efficient and durable material for covering high-pressure surfaces. It is made in thicknesses from 1 in. to 3 in., to fit standard pipe from $\frac{1}{2}$ in. to 14 in. diameter.

Has canvas jacket and bands.

Price list see B3425.

ASBESTOS FIRE-FELT COVERING

For High-Pressure Steam



B3416

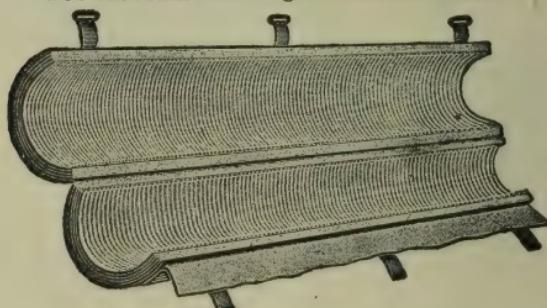
Asbestos Fire-Felt is a product of Fibrous Asbestos, and is made in sections for Pipes, sheets for Boilers, and rolls for Heaters.

Made 1 in. to 3 in. thick to fit standard pipe $\frac{1}{2}$ in. to 16 in. diameter.

Price list see B3425.

ASBESTOCEL COVERING

For Medium and High Pressure Steam



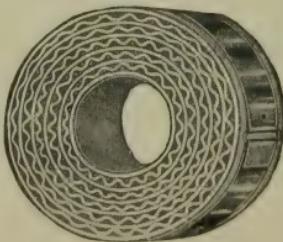
B3417

Asbestocel Covering is constructed of successive layers of plain and corrugated asbestos paper and is an improvement on ordinary air cell coverings, because the corrugations run around the pipe instead of lengthwise, and effectually block out circulation. Made in thicknesses $\frac{1}{2}$ in. to 3 in. to fit standard pipes $\frac{1}{2}$ in. to 16 in. diameter. Has canvas jacket and bands.

Price list see B3425.

**AIR-CELL
ASBESTOS**

For Medium and Low



B3418

**FIRE-PROOF
COVERING**

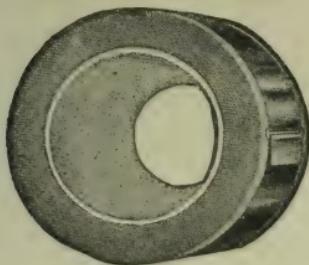
Pressure Steam

An excellent covering, light in weight, and not easily broken like moulded covering. Made in thicknesses $\frac{1}{2}$ in. to 2 in. to fit standard pipes $\frac{1}{2}$ in. to 16 in. diameter. Has canvas jacket and bands.

Price list see B3425

WOOL FELT COVERING

For Hot Water Pipes



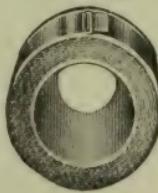
B3419

This covering is composed of layers of wool felt with an inner layer of asbestos paper next to the pipe. Intended for covering hot water heating pipes; is also used on very low pressure steam. Made in sizes for pipe $\frac{1}{2}$ -inch to 8-inch diameter, has canvas jacket and bands.

Price list, see B3425. Made in various thicknesses.

ANTI-SWEAT OR COLD WATER COVERING

For Pipes Conducting Cold Water Through Warm Rooms



B3420

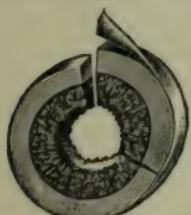
This covering is made of layers of wool felt, with an inner lining of Water-proof Insulating Paper, is about $\frac{1}{2}$ inch thick, has canvas jacket and bands. Price list, see B3425.

ZERO COVERING—B3421

To protect pipes against freezing

Successfully insulates cold water pipes against freezing. When exposed to weather two thicknesses should be used, one section of sufficient size to go over the first covering, breaking all joints, and the surface should be painted with asphaltum, pitch, tar, etc. Has canvas jacket and bands.

Price list see B3425



B3421

FROST-PROOF COVERING

B3422

Consisting of a number of layers of moisture-resisting and cold-repelling felts; successfully insulates against freezing of pipes carrying cold water, gas, etc. Has canvas jacket and bands. Price list see B3425.

SPECIAL AMMONIA AND BRINE PIPE COVERING—B3423

The thickness and arrangement of materials must be regulated by the temperature of the brine, location of pipe, and other conditions. Prospective purchasers are therefore asked for all particulars.

Quoted on application.

SECTIONAL PIPE COVERINGS AND FITTINGS

PRICE LIST—B3425

| Inside Diameter of Pipe | STANDARD THICKNESSES | | | | | SPECIAL THICKNESSES PRICE PER LINEAL FOOT | | | | |
|----------------------------|-----------------------------|--------|------|---------|-----------------|--|-------------------|------------------|---------------------|-------------------------------------|
| | Price per Lineal Foot | Elbows | Tees | Crosses | Globe Valves | Flange Covers | 1½ inch. Thick | 2 inch. Thick | Dbl. Stan. Thick | 3 inch. Thick Broken Joint |
| ½ in. | 0.22 | 0.30 | 0.36 | 0.48 | 0.54 | 0.50 | 0.46 | 0.75 | 0.65 | 1.20 |
| ¾ " | .24 | .30 | .36 | .48 | .54 | .50 | .49 | .80 | .70 | 1.35 |
| 1 " | .27 | .30 | .36 | .48 | .54 | .50 | .52 | .85 | .75 | 1.40 |
| 1¼ " | .30 | .30 | .36 | .48 | .54 | .50 | .56 | .90 | .80 | 1.45 |
| 1½ " | .33 | .30 | .36 | .48 | .54 | .50 | .60 | .95 | .85 | 1.55 |
| 2 " | .36 | .36 | .42 | .54 | .60 | .60 | .64 | 1.00 | .90 | 1.65 |
| 2½ " | .40 | .42 | .48 | .60 | .78 | .70 | .70 | 1.05 | 1.00 | 1.75 |
| 3 " | .45 | .48 | .54 | .70 | .96 | .80 | .76 | 1.15 | 1.10 | 1.90 |
| 3½ " | .50 | .54 | .60 | .80 | 1.20 | .90 | .82 | 1.25 | 1.20 | 2.05 |
| 4 " | .60 | .60 | .75 | .95 | 1.50 | 1.00 | .88 | 1.35 | 1.40 | 2.20 |
| 4½ " | .65 | .72 | .90 | 1.10 | 1.85 | 1.30 | .94 | 1.45 | 1.50 | 2.35 |
| 5 " | .70 | .90 | 1.20 | 1.50 | 2.25 | 1.60 | 1.00 | 1.55 | 1.60 | 2.50 |
| 6 " | .80 | 1.30 | 1.60 | 2.00 | 2.80 | 1.90 | 1.10 | 1.70 | 1.80 | 2.70 |
| 7 " | 1.00 | 1.80 | 2.20 | 2.80 | 3.60 | 2.20 | 1.20 | 1.85 | 2.25 | 2.90 |
| 8 " | 1.10 | 2.40 | 3.00 | 3.60 | 4.40 | 2.50 | 1.35 | 2.00 | 2.50 | 3.15 |
| 9 " | 1.20 | 3.00 | 3.80 | 4.40 | 5.30 | 2.90 | 1.50 | 2.20 | 2.70 | 3.40 |
| 10 " | 1.30 | 3.60 | 4.60 | 5.20 | 6.20 | 3.30 | 1.65 | 2.40 | 2.90 | 3.65 |
| *12 " | 1.85 | ... | ... | ... | ... | ... | 1.85 | 2.70 | 4.10 | 4.10 |
| 14 " | 2.10 | ... | ... | ... | ... | ... | 2.10 | 3.00 | 4.60 | 4.60 |
| 16 " | 2.35 | ... | ... | ... | ... | ... | 2.35 | 3.30 | 5.10 | 5.10 |
| 18 " | 2.60 | ... | ... | ... | ... | ... | 2.60 | 3.60 | 5.60 | 5.60 |
| 20 " | 2.85 | ... | ... | ... | ... | ... | 2.85 | 4.00 | 6.00 | 6.00 |
| 24 " | 3.30 | ... | ... | ... | ... | ... | 3.30 | 4.50 | 7.00 | 7.00 |
| 30 " | 4.00 | ... | ... | ... | ... | ... | 4.00 | 5.50 | 8.40 | 8.40 |

*All Magnesia coverings above 14" furnished in segmental form, other coverings in sectional form in all sizes.

All pipe coverings are supplied in sections three feet long, canvased and with bands. For irregular flanges or fittings larger than 10 inches use our Magnesia Cement or Asbestos Cement Felting.

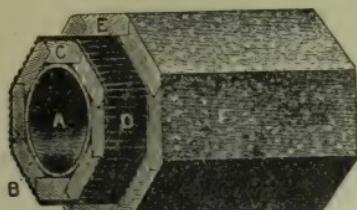
ALL SHEETS AND BLOCKS

PRICE LIST—B3426

Per Square Foot

| | | | | | | | |
|-------|------|---------|------|---------|------|---------|------|
| ½ in. | 0.27 | 1 ½ in. | 0.42 | 2 ½ in. | 0.64 | 2 ¾ in. | 0.87 |
| ¾ " | .27 | 1 ½ " | .45 | 2 ¼ " | .68 | 3 " " | .90 |
| ⅔ " | .30 | 1 ¾ " | .49 | 2 ¾ " | .72 | 3 ¼ " | .98 |
| 1 " | .30 | 1 ¾ " | .53 | 2 ½ " | .75 | 3 ½ " | 1.05 |
| 1 ½ " | .34 | 1 ¾ " | .57 | 2 ½ " | .79 | 4 " " | 1.20 |
| 1 ¾ " | .38 | 2 " | .60 | 2 ¾ " | .83 | .... | .... |

WYCKOFF'S WOOD PIPE COVERING

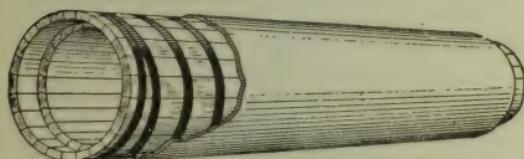


A—Tin Lining B—Asbestos Paper C—Wood D—Corrugated Paper E—Wood F—Asphaltum Coating

PATENT COVERING

B3427

(Illustration shows Lined covering.)



ROUND STAVE COVERING

B3428

Socket Connection as
Illustrated.

| Inside Diameter Covering in. | 2 | 2½ | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--------------------------------|------|------|------|------|------|------|------|------|------|------|
| For Size Pipe in. | 1 | 1½-½ | 2 | 2½ | 3-½ | 4-½ | 5 | 6 | 7 | 8 |
| Patent Lined per ft. | .34 | .41 | .50 | .65 | .81 | .98 | 1.13 | 1.30 | 1.46 | 1.62 |
| " Unlined " | .25 | .30 | .36 | .48 | .60 | .72 | .84 | .96 | 1.08 | 1.20 |
| Wood Stave Lined " | .27 | .34 | .38 | .49 | .60 | .74 | .87 | 1.02 | 1.17 | 1.32 |
| " " Unlined " | .18 | .... | .26 | .36 | .44 | .50 | .60 | .68 | .79 | .90 |
| Inside Diameter Covering in. | 11 | 12 | 13 | 14 | 16 | 17 | 18 | 19 | 20 | .... |
| For Size Pipe in. | 9 | 10 | 11 | 12 | 13 | 14 | 15 | .... | .... | .... |
| Patent Lined per ft. | 1.78 | 1.94 | 2.11 | 2.27 | 2.59 | 2.75 | 2.92 | 3.08 | 3.24 | .... |
| " Unlined " | 1.32 | 1.44 | 1.56 | 1.68 | 1.92 | 2.04 | 2.16 | 2.28 | 2.40 | .... |
| Wood Stave Lined " | 1.51 | 1.70 | 1.90 | 2.09 | 2.59 | 2.73 | 2.90 | 3.03 | 3.16 | .... |
| " " Unlined " | 1.05 | 1.20 | 1.35 | 1.50 | 1.93 | 2.02 | 2.14 | 2.23 | 2.32 | .... |

The Patent Covering is made of two thicknesses (eight staves each) of White Pine, each thickness wound with galvanized wire, and having two thicknesses of heavy corrugated paper between the inner and outer jacket. For underground use the covering is coated on the outside with black asphaltum pitch. When used exposed it can be furnished painted outside with black asphaltum paint. Wood covering is made in from 4 to 8 feet joints to be slipped over the pipes as they are being connected, but where pipe is already connected up, the Patent Covering can be furnished opened at a joint to be clamped around the pipe. The Unlined Covering is suitable for cold storage or brine pipe, and for hot water or low-pressure steam pipes. The Lined Covering is intended for any pressure steam above 10 pounds, the lining of tin and two layers of Asbestos paper preventing wood from charring.



B3430

MINERAL WOOL

Mineral Wool has become a staple article and is generally used for all purposes of fire-proofing and cold storage insulation. It requires about $\frac{3}{4}$ of a pound to cover 1 square foot of surface 1 inch thick.

Ordinary grade weighs 14 pounds per cubic foot. Selected grade, 10 pounds per cubic foot. Extra grade, 6 pounds per cubic foot.

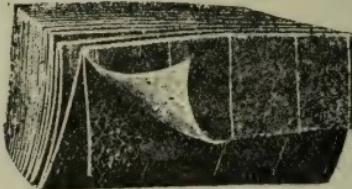
In 50-pound bags..... per bag, 2.50
Ton lots quoted on application.

STANDARD HAIR FELT

B3431

| | | | | | | | |
|----------------|-----------------|---------------|-------------------|-------------------|-----|----------------|-----|
| Thickness..... | inches | $\frac{1}{4}$ | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{2}$ | 2 |
| Price..... | per square foot | .07 | .08 $\frac{1}{2}$ | .10 $\frac{1}{2}$ | .12 | .18 | .24 |

Put up in sheets 6 feet wide and rolled in bale of 300 square feet. Can be furnished 3 feet wide if desired.

KEYSTONE HAIR INSULATOR

B3432

This insulator consists of clean washed Cattle Hair between two layers of strong, non-porous paper securely fastened together. The following carried in stock.

Packed in bales, folded, not rolled, three feet wide, containing 500 square feet each.

| Brand | Bale Weight Pounds | Measure of Bale Inches | Price Per Bale |
|---|-----------------------|------------------------------|----------------------|
| Acme. Plain Paper both sides for lining, interlining and deadening purposes | 60 | 18 x 18 x 36 | 5.75 |
| Peerless. Felt paper one side. Plain paper other side, for deadening immediately under flooring boards..... | 80 | 18 x 20 x 36 | 7.50 |

WOOL DEADENING FELT-B3433

Not Illustrated

| Grade | Plain | Plain | Corrugated | Corrugated |
|--------------------------|-------|----------------|------------|----------------|
| Square feet to roll..... | 450 | 450 | 450 | 450 |
| Weight..... lbs. | 1 | $1\frac{1}{2}$ | 1 | $1\frac{1}{2}$ |

Price, all sizes, \$3.00 per 100 pounds. 36 inches wide.

ASBESTOS ROOFING**MANVILLE BRAND**

B3434

1. Pure Asbestos Saturated Sheet
2. Layer of Acid and Waterproof Asphalt Cement
3. Heavy Canvas Burlap Saturated
4. Layer of Acid and Waterproof Asphalt Cement
5. Pure Asbestos Saturated Felt
6. Layer of Acid and Waterproof Asphalt Cement
7. Pure White Asbestos Felt Weather Surface

Prices quoted on application.

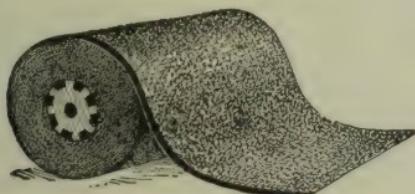
RUBBEROID ROOFING—B3435

Not illustrated.

One of the best roofings on the market. Can be furnished as follows:

| Ply | Weight Per Square | Price Per Square |
|-----|-------------------|------------------|
| 1 | 35 lbs. | 2.25 |
| 2 | 45 lbs. | 3.25 |
| 3 | 55 lbs. | 4.00 |

Each square containing 100 square feet, 32 inches wide.
Cement, nails, and caps, and extra material for 2" lap included.

MINERAL ASPHALT GRAVEL ROOFING

B3436

Manufactured from genuine Trinidad Lake Asphalt, which makes it as nearly fireproof as any ready roofing in the market.

Put up in rolls 40½-feet long, 32-in. wide, containing 108 sq. feet, sufficient to cover 100 sq. feet of roof allowing the difference for the laps, cement and nails for lap included.



TARRED PAPER ROOFING

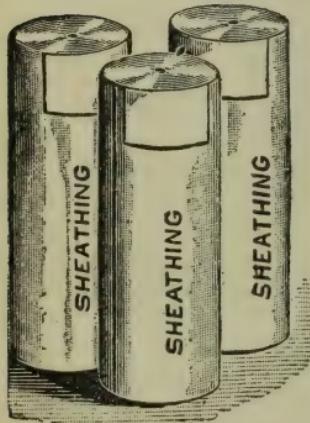
B3437

Put up in Rolls 32" wide of 108 square feet.

1 ply complete with Nails and Caps, \$2.50.

2 ply complete with Nails and Caps, \$3.00.

3 ply complete with Nails and Caps, \$3.50.



BUILDING PAPER

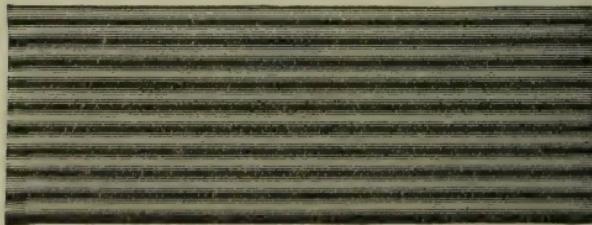
B3438

Red Rosin Sized

| Grade..... | A | B | C |
|--------------------------|-----|-----|-----|
| Square Feet | 500 | 500 | 500 |
| Weight per Roll.....lbs. | 30 | 25 | 20 |
| Price..... | .87 | .63 | .58 |

METAL ROOFING AND SIDING CORRUGATED SHEETS

2½-Inch Corrugations. Painted or Galvanized



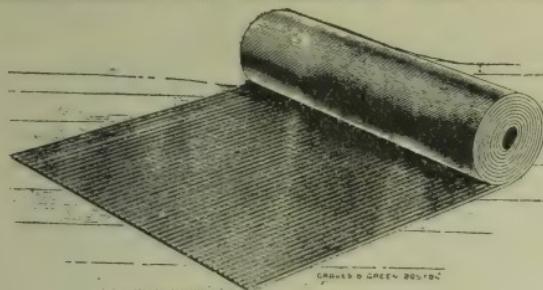
B3439

Prices on application.

| Gauge No..... | 28 | 26 | 24 | 22 | 20 |
|---------------------------------------|----|----|-----|-----|-----|
| Painted, Weight per Square.....pounds | 68 | 83 | 110 | 137 | 163 |
| Galvanized, Weight per Square....." | 85 | 98 | 124 | 152 | 180 |

Regular stock lengths, 4, 5, 6, 7, 8, 9, 10, and 12 feet. When lengths not specified, 8-foot sheets always sent. An extra charge is made for 12-foot sheets.

Can furnish with corrugations smaller than 2½ inch, at special price.

CORRUGATED RUBBER MATTING

B3440

Per pound, 40c.

Much heavier than common corrugated matting.

Thicknesses and weights as follows:

| Thickness Inches | Width Inches | Yards Long | Weight Pounds | Thickness Inches | Weight Per Sq. Yard, Lbs. |
|---------------------|-----------------|---------------|------------------|---------------------|------------------------------|
| $\frac{3}{32}$ | 30 | 1 | 6 | $\frac{3}{16}$ | $14\frac{1}{2}$ |
| $\frac{3}{32}$ | 35 | 1 | 7 | $\frac{1}{4}^*$ | 19 |
| $\frac{3}{32}$ | 36 | 1 | $7\frac{1}{4}$ | $\frac{5}{16}$ | 24 |
| $\frac{3}{32}$ | 40 | 1 | 8 | $\frac{3}{8}$ | $28\frac{1}{2}$ |
| $\frac{1}{8}$ | 30 | 1 | $7\frac{1}{2}$ | $\frac{7}{16}$ | 33 |
| $\frac{1}{8}$ | 35 | 1 | $8\frac{3}{4}$ | $\frac{1}{2}$ | 38 |
| $\frac{1}{8}$ | 36 | 1 | 10 | .. | .... |
| $\frac{1}{8}$ | 40 | 1 | 11 | .. | .... |

METAL INSERTED MATS

B3441

Are made with Metal insertions in each or every other rubber diamond, as desired.

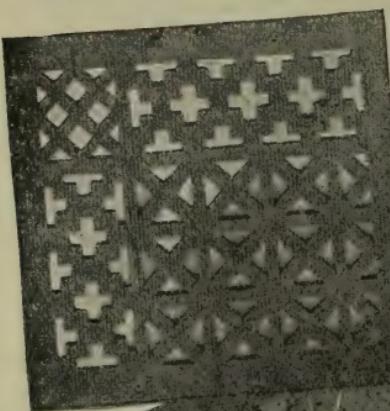
Manufactured up to 80 inches wide and 6 feet long.

| | |
|--|------|
| $\frac{3}{8}$ inch thick, per square foot..... | 1.00 |
| $\frac{1}{4}$ " " " " | 1.30 |

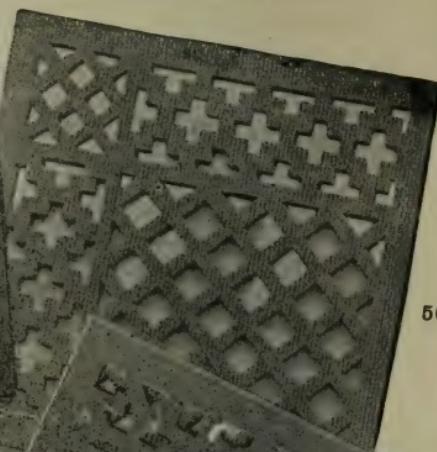
RUBBER MATS AND RUBBER MATTING IN ROLLS

Can be furnished in many different patterns, colors, thicknesses and widths. Please state requirements as to quantity desired and purpose to be used for and we will quote prices.

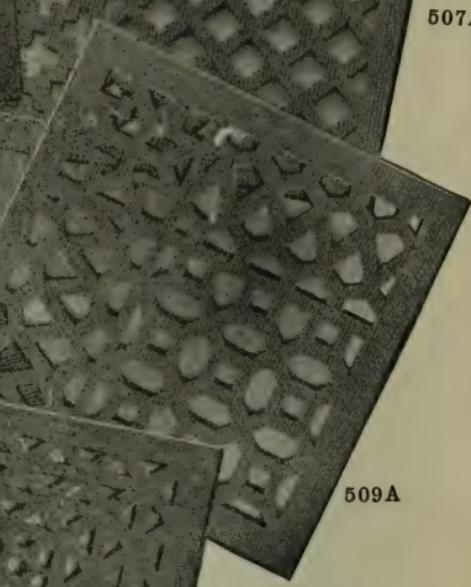
505A

PERFORATED RUBBER MATTING

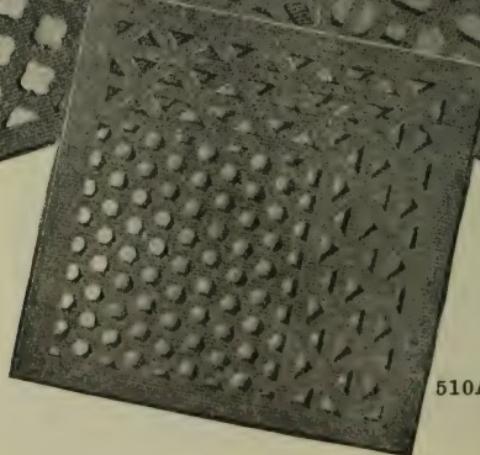
507A



508



509A



510A

B3442

PERFORATED RUBBER MATTING

| Thickness | inch | $\frac{1}{4}$ | $\frac{3}{8}$ | $\frac{1}{2}$ | $\frac{5}{8}$ |
|---------------------------|------|---------------|---------------|---------------|---------------|
| Per Square Foot | | .75 | 1.00 | 1.25 | 1.50 |

Letters, Each Extra, 50c.

Made in widths up to 6 feet, and any color desired.



**WHITE SEAL BELT DRESSING
FOR USE ON LEATHER, RUBBER, COTTON, OR
RAWHIDE BELTING**

B3445

Directions for Using—Heat the Dressing to a temperature that will not burn the hand and apply with a brush or rag to both sides of the belt while not in motion. Or to prevent belts from slipping, apply cold to the pulley-side of belt while in motion.

White Seal Dressing will make your belts soft and pliable, transmit fifty per cent more power and last longer than any other dressing on the market. No Resin or other ingredients in this dressing that will injure your belts. Guaranteed to give satisfaction.

Put up in 1-lb., 2-lb., 4-lb., and 8-lb. cans.
Price.....per lb. .50

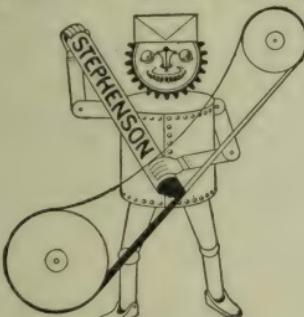
DIXON'S BELT DRESSING



B3446

Put up in 1-lb. Bars in paste form for use on any kind of belting.
Price.....per lb. .40

STEPHENSON BELT DRESSING



For Leather Belt

For Rubber Belt

For Canvas Belt

For Cotton Belt

B3447

Put up in 1-lb. Bars in paste form.

Price.....per lb. .40

RUBBER CEMENT—B3448

Put up in 1-lb. cans.

Price.....per lb. 1.50

LEATHER BELT CEMENT—B3449

Price.....per lb. 1.50

We manufacture a Belt Cement which, for the sake of convenience, we put up in cans weighing one pound each. We sell it either in cans or in cake as desired.

Directions for Preparing and Using Leather Belt Cement

Heat in an ordinary glue pot, and when dissolved, if found to be too thick, reduce with water to about the consistency of syrup. Apply with a brush while hot a thin coating to the surface of the laps to be cemented and rub down with some smooth instrument. The face or pene of a hammer may be used. The laps cemented should be allowed to set for at least one hour.



B3450

SMOOTH-ON IRON CEMENTS

SMOOTH-ON is a chemical iron compound, and with the exception of the **Elastic Cement** which is mixed ready for use, is prepared in powdered form, and, when mixed with water to the consistency of a stiff putty, possesses the property of metallizing, and, if unconfined, expands while hardening. By this action it is valuable for many mechanical uses. It will resist the action of heat, steam, water or oil. It will not produce corrosion, whether applied to cast iron, wrought iron or steel. Will make permanent repairs.

SMOOTH-ON CASTINGS—For Foundrymen, is an iron cement for repairing blemishes, blow holes, or other defects in iron or steel castings. Applied as a putty. Yellow labeled cans.

| Smooth-On Castings | 1 Lb. | 5 Lb. | 10 Lb. | 25 Lb. |
|---------------------------------|-------|-------|--------|--------|
| Per can | .80 | 3.50 | 6.00 | 12.50 |

SMOOTH-ON IRON CEMENTS—No. 1 and No. 2, for Engineers. These cements are for repairing leaks or breaks in castings and for making connections in steam and hydraulic work, and for practically any repairs in iron or steel. Will withstand fire. No. 1 is quick hardening; No. 2 is slow hardening. Applied as a paste or putty. Put up in blue labeled cans.

| Smooth-On Iron Cements | 1 Lb. | 5 Lb. | 10 Lb. | 25 Lb. |
|-------------------------------------|-------|-------|--------|--------|
| Per can | 1.00 | 4.00 | 7.00 | 15.00 |

SMOOTH-ON ELASTIC CEMENT.—A hydraulic iron cement, especially prepared in oil for use on all seams of boilers or tanks to stop leaks; also, for boiler patching and screw thread joints. Applied as a paint, paste or putty. Put up in gray labeled cans.

| Smooth-On Elastic Cement | 1 Lb. | 5 Lb. | 10 Lb. | 25 Lb. |
|---------------------------------------|-------|-------|--------|--------|
| Per can | 1.00 | 4.00 | 7.00 | 15.00 |

SMOOTH-ON JOINTS—An iron cement for connecting bell and spigot cast iron pipe in place of calking with lead, and in combination with lead. Applied as a stiff putty. Put up in red labeled cans.

| Smooth-On Joints | 5 Lb. | 10 Lb. | 25 Lb. |
|-------------------------------|-------|--------|--------|
| Per Can | 2.00 | 4.00 | 7.50 |

Directions for use on each can.

LEAK-NO—B3454

| Put up in Cans | 1 Lb. | 5 Lb. | 25 Lb. | 50 Lb. |
|-----------------------------|-------|-------|--------|--------|
| Per pound | 2.00 | 1.80 | 1.70 | 1.50 |

SOME OF THE USES OF LEAK-NO.—For repairing cracks or spongy spots in iron or steel castings to make them steam or water tight, especially useful in repairing furnaces, boilers and radiators, gas-engine cylinders, wrought or cast-iron pipes, and tanks holding steam, water, gas, oil, ammonia or brine.

Will make water-tight joints between the ends of steel plates. Used instead of lead on soil pipe joints, and for setting prism lights. Used for setting waste plugs of shower baths in concrete, tile, etc. **Leak-No** will stand any heat that iron will stand—it expands and contracts equally with the metal, insuring permanent repair.

"LEAK STOPPER" CEMENT—B3455

Per package weighing about 3 pounds, containing a box of powder and a bottle of acid for mixing net 6.00

For repairing boilers, radiators, pipes, fittings, etc. Will stick iron, brass, copper, lead, tin, glass, marble, wood, etc.

**SCREW
PIPE
JOINT
FILLER**



**LUBRICANT
AND
CEMENT
COMPOUND**

B3460

Red Cross Pipe-joint Filler is a mineral product which cannot be affected by acids, alkalis, superheated steam, or electricity. It is warranted to make tight joints that will remain tight. It will not harden in the joint, and a joint which has been made for years can be taken apart easily, without injury to pipe or fitting.

Made in two colors, Light and Dark.
Dark for General Use—Light for Nickel-Plated Work.

| | | |
|--|---------|------|
| 1 Pint Cans, (24 pints in a case) | Per can | .50 |
| 2 Quart Cans, (6 2-quart cans in a case) | " | 1.40 |

H-O PIPE JOINT CEMENT B3461

| Put up in... | 1 lb. Can | 5 lb. Can | 12½ lb. Can | 25 lb. Can | 50 lb. Can | Bbl. |
|--------------|-----------|-----------|-------------|------------|------------|------|
| Per Pound... | .30 | .28 | .25 | .24 | .23 | .22 |

In making up joints, it has the same effect as a lubricant of the best graphite, and while the making and breaking of joints is thus facilitated, a perfectly tight joint is maintained at all times.

H-O Pipe-joint Cement is mixed with linseed oil for all pipe work, such as Steam, Water, Gas, and Air, and by mixing with water may be used as a putty for connecting up Sink Wastes, Basement Plugs, Bath Plugs, Closets, etc.

U. S. METAL POLISH

For Polishing Gold, Silver, Plated Ware, Nickel, Tin, Brass, Copper, etc. Warranted Free from Acid or Grit.

U. S. Metal Polish Paste removes Stains and produces a brilliancy equal to new. It is unequalled for polishing and cleansing Gold, Silver and Plated Ware, Show Cases, Scales and Store Fixtures, Brass, Nickel, Copper, Zinc and Tinware, Band Instruments, Locomotive and Machine Mountings, Headlight Reflectors, Carriage and Harness Mountings, Dairy and Kitchen Utensils, Metal Street Signs, and everything in the planished metal line.



B3462

| Paste | Each | Doz. Lots | Liquid | Each | Doz. Lots |
|------------------|------|-----------|------------------|------|-----------|
| 3 Ounce Boxes... | .20 | 1.00 | 8 Ounce Cans ... | .50 | 2.50 |
| ½ Pound " | .50 | 2.50 | 1 Pint " | .80 | 4.50 |
| 1 " " | 1.00 | 4.50 | 1 Quart " | 1.20 | 8.50 |
| 5 " Pails... | 2.00 | 18.00 | 1 Gallon " | 2.50 | 18.00 |

BAR-KEEPER'S FRIEND (POWDER)

| | | | | |
|--------------------|---------|-----|--------------------|------|
| 1 Pound Boxes..... | Per Box | .50 | Full Doz. Lot..... | 3.50 |
|--------------------|---------|-----|--------------------|------|

Special prices quoted on Gross or Great Gross lots.



B3463



B3464

The following are barrel prices, see note.

CYLINDER OILS

| | Per Gallon. |
|---|-------------|
| ED Valve 650 Fire Test..... | .75 |
| CCC Cylinder 600 Fire Test..... | .60 |
| Banner Valve 600 Fire Test, Filtered..... | .70 |
| Gem Cylinder..... | .45 |

ENGINE OILS

| Per Gallon. | Per Gallon. |
|---|-------------|
| Special Red Engine Oil, 450 Fire Test | .45 |
| Arctic Engine Oil | .35 |
| Indiana Engine Oil | .35 |
| Gasoline Motor Car Oil | 1.00 |
| Gas Engine Oil, 600 Fire Test | .50 |
| Golden Gas Engine Oil | .35 |
| OK Castor Machine Oil | .40 |
| XXX Castor Machine Oil | .45 |
| Dynamo Amber Oil, 400 Fire Test .. | .40 |
| Black Oil (Summer) | .25 |
| No. 7. Cold Test Black Oil | .20 |
| Zero Black Oil | .20 |
| Lard Oil | 1.25 |

Combination Screw Cutting Oil quoted on application.

| | |
|--|--------------------------------------|
| Above are barrel prices. For less quantity we charge extra (for cans), as follows: | |
| 1/2 Barrel, net extra for package .75 | 3 Gallon net extra for can .35 |
| 10 Gallon net extra for can .75 | 2 Gallon " " " .25 |
| 5 Gallon " " " ".50 | 1 Gallon " " " ".20 |

HARD OIL—B3465

No 4, in 5, 10, 25 and 50 lb. packages.
Per lb..... 12c

AXLE GREASE—B3466

Gem, 25 lb. pail..... 2.00
Grapho, 25 lb. pail..... 2.50

ALBANY GREASE

For Engines, Automobiles, Machinery, etc.

| | |
|---|-------------|
| In 5, 10 and 25 lb. cans | per lb. .40 |
| " 50 lb. cans | " .36 |
| 100 lb. keg at 32c. Half-barrel., 200 lb. 26c. | |

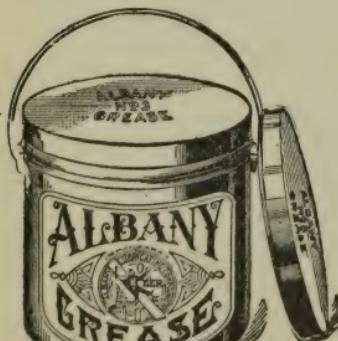
Barrel, 400 lbs. at 24c. per lb.

When ordering Compound, give the temperature of room or climate—size of bearing—if lubricated by Cups or Swabbing.

Always mention for what part or kind of machinery intended.

No. 0, very soft for extreme cold weather and exposed journals. No. 1, is harder for ordinary journals in cold weather, or very slow running journals and elevator slides. No. 2, is still harder, and is grade ordinarily used in moderate and warm weather, and general shafting. No. 3, is for use on all stationary and marine engines, also shafting in warm weather, dynamos and general high speed machinery.

No. X is of extra hardness, will lubricate journals where no oils or other kinds of lubricants will work. No. XX is harder than X, is for extreme conditions; melting point 125° to 150° F. No. XXX is very hard, for unusual conditions; melting point 165° to 175° F.



B3467

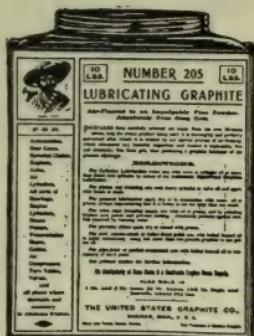
LUBRICATING GRAPHITE

DIXON'S FLAKE GRAPHITE



B3468

U. S. PULVERIZED GRAPHITE



B3469

| | | | | |
|----------------|---------|------|--------------------------------------|------|
| 1-lb. can..... | per can | .40 | 1-lb. Pat. Friction Top Can, per can | .40 |
| 5 " " | " | 1.80 | 5 " Screw Top Tin Cans | 1.80 |
| 10 " " | " | 3.50 | 10 " " " " " | 3.30 |
| Barrel | per lb. | .25 | 25 " Strawboard Boxes...per box | 6.00 |
| | | | Kegs (about 100 lbs.)..... per lb. | .20 |
| | | | Barrels (about 325 lbs.)..." | .18 |

The U. S. Pulverized Graphite is packed in cases as follows: 30 1-lb. cans, 12 5-lb. cans, 6 10-lb. cans, or 2 25-lb. boxes.

Recommended as a lubricant for steam and gas engine cylinders, for piston rods, and for all bearings; also for making smooth joints, and should be applied to all rubber and canvas packing.

The Pulverized Graphite can be used mixed with linseed oil as a preservative paint for smoke-stacks, boiler-fronts, etc., or as a joint compound for pipes, etc.



B3470

GRAPHITE GREASE

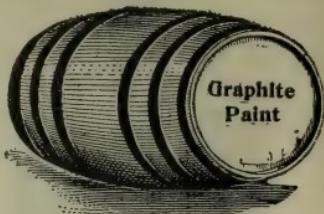
| | | |
|--|----------|-------|
| 1-lb. Cans (36 in case)..... | per can | .70 |
| 5 " Tin Pails (12 in case)..... | " | 3.00 |
| 10 " " (6 in case)..... | " | 5.50 |
| 25 " Wood Pails..... | per pail | 12.00 |
| Kegs (about 140 lbs.)..... | per lb. | .44 |
| One-half Barrels (about 300 lbs.)..... | " | .42 |
| Barrels (about 500 lbs.) | " | .40 |

This Lubricant is a compound of best quality Lubricating Graphite with proper mineral oils, and is of such consistency as to be easily introduced with an ordinary oil syringe, or, which is preferable, the gear case may be taken apart and packed with the grease, which is absolutely free from grit and may be used freely.

It will be found much more economical than oil or other greases, not only because of the wearing quality imparted by the lubricating graphite in its composition, but also because it will not run and leak out as does oil or common grease.

It is not affected by heat or cold. For general automobile lubrication, and particularly desirable for transmission or speed-changing gears, differentials, enclosed gears, etc., etc.

GRAPHITE PAINT



B3471

PRICES, COLOR A—NATURAL COLOR, AND COLOR D—DARK BROWN

Liquid, Ready-for-use

| | | | | |
|--|------|------------------------------|----------|------|
| ½ gal. Tin Pails(12 in case), per gal. | 1.60 | 10 gal. Kits..... | per gal. | 1.40 |
| 1 gal. Tin Pails (6 in case) " | 1.55 | ½ barrels (about 30 gal.),.. | " | 1.30 |
| 5 gal. Kits..... " | 1.45 | Barrels (about 52 gal.).... | " | 1.25 |

Paste Form

To make one gallon liquid paint, mix $3\frac{1}{8}$ lbs. paste with $\frac{3}{4}$ gal. boiled linseed oil.

| | | | | |
|---------------------------------------|------|------------------------------|---------|------|
| 5 lb. Tin Pails (20 in case), per lb. | .15 | 125 lb. Kegs..... | per lb. | .13 |
| 12½ lb. Tin Pails (8 in case) " | .14 | ½ barrels (about 350 lbs.).. | " | .12½ |
| 25 lb. Tin Pails (4 in case) .. " | .13½ | Barrels (about 600 lbs.).... | " | .12 |

Semi-Paste Form. Quoted on application.

EXTRA

Color B—Dark Green. Add to prices above listed 1c. per pound on Paste Form and 10c. per gallon on Ready-for-use Paint.

Color C—Jet Black. Add to prices above listed $\frac{1}{2}$ c. per pound on Paste Form and 5c. per gallon on Ready-for-use Paint.

Graphite Paint is unequalled for durability. Owing to its large covering power and reasonable price, costs less than other good paints—a paint that is inexpensive but not cheap—just the thing for Structural Iron and Steel, Steam Pipes, Coils, Roofs, Smoke Stacks, Boiler-fronts, Gas Holders, Vessels, Fences, Freight Cars, Water Tanks, Bridges, Grain Elevators, Trolley Poles, etc., etc.

ACME BOILER COMPOUND

Dry and Liquid Form



B3472

| | | | | |
|------------------|---|-------------------|----------------------|---------------------|
| Dry, 50 lb. Box | { |per lb., .20 | Liquid, 5 Gallon Can | }per lb., .10 |
| " Quarter Barrel | | | " 10 " | |
| " Half " | | | " Half Barrel " | |
| " Full " | | | " Full " | |

Directions and information furnished on application.

JAMES BROS. WORLD RENOWNED OIL SOAP

A PERFECT CLEANER AND RENEWER
PURELY A VEGETABLE PRODUCT
EFFICIENT AND ECONOMICAL

For all kinds of Cleaning and General Use in

Buildings
Hotels
Theatres
Hospitals
Schools
Public Institutions
Dry Goods Stores



Automobile Garages
Liveries
Fire Departments
Churches
Street Railway Cars
Boat Lines
Factories
Household

B 3473

Unexcelled for Automobiles, Carriages and Harness Cleaning

There is nothing James Bros. Oil Soap will not clean, no finish so fine, no fabric so delicate, as to be injured in any degree by its continued use.

Pure and harmless yet wonderfully cleansing. It is so far superior to common soaps and powders that you will be surprised.

James Bros. Oil Soap is put up as follows:

Barrels, containing about 450 lbs.; $\frac{1}{2}$ barrels, 250 lbs.; $\frac{1}{4}$ barrels, 125 lbs.; pails, 50 and 25 lbs.



BLACK ASPHALTUM PAINT

For Smoke Stacks, Boiler Fronts,
Pipe and Iron Work of all kinds.

Used Extensively as a Ce-
ment on Screwed Pipe
Joints.



Asphaltum can be furnished in barrels, half barrels, or in cans of any size desired. It is put up in many grades to suit the price, or the use for which intended. Prices on application.

State relative quality wanted, and for what purpose used.



SPECIAL COMPOUND RUBBER ROOFING CEMENT

The most reliable article ever used for repairing leaky roofs of every kind, cementing joints around chimneys, skylights, dormer windows, fastening broken slates, cementing gutters, etc. It firmly adheres to all surfaces; will not crack nor peel off. It slowly hardens into a leather-like surface that will last as long as the roof stands. Color red.

| | |
|---------------------------------------|-----|
| In butter firkins, per lb..... | .05 |
| In 5, 10 and 15 lb. cans, per lb..... | .06 |



BABBITT METAL

B3484

About 6 pound bars.



B3485

About 8 pound bars.

| | | |
|--|-----------|-----|
| Genuine Babbitt (in 6 pound bars)..... | per pound | .60 |
| " " (in 8 " ")..... | " | .60 |
| No. 2 " (in 8 " ")..... | " | .17 |
| No. 4 " (in 8 " ")..... | " | .10 |

The **Genuine** is intended for **High Speed** and **Hard Work**.The **No. 2** is **Medium Grade** for general purpose.The **No. 4** is a **Cheap Grade** for slow speed.

The above brands are put up at the factory in 50 pound boxes.



B3486

In bars of about 6 pounds each. Per pound, 26c.

Reliable is a **Good Grade** for line shafting and ordinary low class duties.

SUPERIOR BABBITT



B3487

About 2 pounds to the cake, fitting ladle.

Per pound, 70c.

A Nickel and Copper Hardened Metal
for High Speed.

PEERLESS BABBIT



B3488

About 8 Pounds to the bar. Each cake fits in ladle. Per pound, 35c.

Peerless is suitable for general mill work and mill machinery, where speed does not exceed 1,150 revolutions and pressure one ton per square inch. Especially adapted for all classes of wood-working machinery.

ALUMINUM COPPER ANTI-FRICTION METAL

GENUINE

EXTRA



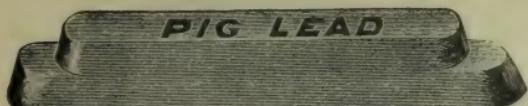
B3489

Put up in bars of about 6 pounds each. Boxes approximately 50 pounds.

Genuine, per pound, 70c. Extra, per pound, 25c.

Is a very high grade metal, and is particularly suitable for use on machinery where linings of boxes are unusually shallow, and where great tensile strength is required to sustain great pressure at high speed.

For high or low speed machinery. Is lighter in weight than other grades.



B3490

PIG LEAD

Usually approximately 80 lbs.
each.
Per lb.....10c



B3491

LEAD BLOCKS

Approximately 5 lbs. each.
Per lb.....12c

LEAD SHEET AND PIPE

Sheets are usually 9 feet wide and of various thicknesses. Pipe is made all sizes from $\frac{1}{8}$ inch to 4 inches diameter, and of various weights for different purposes.



B3492

PIG TIN

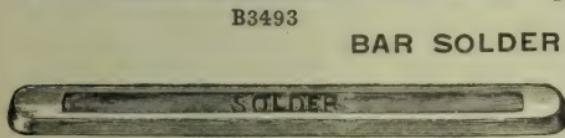
Usually over 100 lbs. each.
Per lb.....80c



B3493

BLOCK TIN PIPE

Prices on application.

**BAR SOLDER**

Usually about $1\frac{1}{2}$ lbs. each.
Per lb.....90c

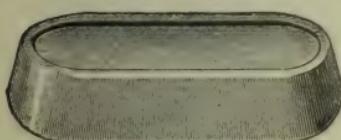


B3494

Usually carried in stock in Half-and-Half grade; also 40-60 grade for wiping. Bars usually about $1\frac{1}{2}$ lb. each.

Half-and-half per lb.....50c
40-60 grade same price as below.

Furnished in Commercial and Warranted brands.



B3495

WIPING SOLDER

40-60 grade usually in blocks of about $3\frac{1}{2}$ lbs.
each.
Per lb.....40c

Solder is packed in 500-lb. cases.

Wire Solder (half-and-half) on spools.
Silver Solder in sheets $\frac{1}{8} \times 48$ inches.

ANTIMONY

B3496

Per lb.....

Per lb.....

Usually in slabs of approximately 50 lbs. or less.

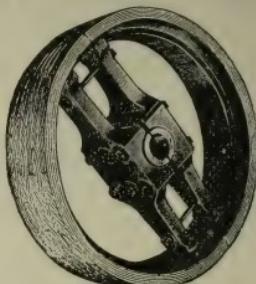
Net Prices on Metals quoted on application.

SPELTER OR ZINC

B3497

WOOD SPLIT PULLEYS

Pulleys over 36-inch diameter have six spokes instead of four.



B3500

In ordering mention diameter first, then width of face, Straight or Crown, and Bore.

| Diameter Inches | WIDTH OF FACE, INCHES | | | | | | | | | | |
|--------------------|-----------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|-------|
| | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 3 | 1.90 | 2.00 | 2.10 | 2.25 | 2.40 | 2.60 | 2.85 | 3.10 | 3.35 | 3.60 | 3.85 |
| 4 | 2.00 | 2.10 | 2.20 | 2.40 | 2.60 | 2.85 | 3.10 | 3.35 | 3.60 | 3.85 | 4.10 |
| 5 | 2.10 | 2.20 | 2.40 | 2.60 | 2.85 | 3.10 | 3.35 | 3.60 | 3.85 | 4.10 | 4.40 |
| 6 | 2.20 | 2.35 | 2.55 | 2.75 | 3.00 | 3.25 | 3.50 | 3.75 | 4.00 | 4.30 | 4.65 |
| 7 | 2.30 | 2.45 | 2.65 | 2.85 | 3.10 | 3.35 | 3.60 | 3.85 | 4.15 | 4.50 | 4.85 |
| 8 | 2.45 | 2.60 | 2.80 | 3.00 | 3.25 | 3.50 | 3.75 | 4.00 | 4.30 | 4.65 | 5.00 |
| 9 | 2.60 | 2.80 | 3.00 | 3.25 | 3.50 | 3.75 | 4.00 | 4.30 | 4.65 | 5.00 | 5.40 |
| 10 | 2.80 | 3.00 | 3.25 | 3.50 | 3.75 | 4.00 | 4.30 | 4.65 | 5.00 | 5.40 | 5.80 |
| 11 | 3.00 | 3.25 | 3.50 | 3.75 | 4.00 | 4.30 | 4.65 | 5.00 | 5.40 | 5.80 | 6.20 |
| 12 | 3.15 | 3.40 | 3.65 | 3.90 | 4.20 | 4.55 | 4.90 | 5.30 | 5.70 | 6.10 | 6.50 |
| 13 | 3.30 | 3.55 | 3.80 | 4.10 | 4.45 | 4.80 | 5.20 | 5.60 | 6.00 | 6.40 | 6.80 |
| 14 | 3.45 | 3.70 | 4.00 | 4.35 | 4.70 | 5.10 | 5.55 | 6.00 | 6.45 | 6.90 | 7.40 |
| 15 | 3.60 | 3.90 | 4.25 | 4.60 | 5.00 | 5.45 | 5.90 | 6.35 | 6.80 | 7.30 | 7.80 |
| 16 | 3.80 | 4.15 | 4.50 | 5.00 | 5.50 | 6.00 | 6.50 | 7.00 | 7.50 | 8.00 | 8.50 |
| 17 | 4.00 | 4.40 | 4.90 | 5.40 | 5.90 | 6.40 | 6.90 | 7.40 | 7.90 | 8.40 | 8.90 |
| 18 | 4.20 | 4.70 | 5.20 | 5.70 | 6.20 | 6.70 | 7.20 | 7.80 | 8.40 | 9.00 | 9.60 |
| 19 | 4.40 | 4.90 | 5.40 | 5.90 | 6.50 | 7.10 | 7.70 | 8.30 | 8.90 | 9.50 | 10.20 |
| 20 | 4.60 | 5.20 | 5.80 | 6.40 | 7.00 | 7.60 | 8.30 | 9.00 | 9.70 | 10.40 | 11.20 |
| 21 | 4.80 | 5.40 | 6.00 | 6.60 | 7.30 | 8.00 | 8.70 | 9.40 | 10.20 | 11.00 | 11.80 |
| 22 | 5.00 | 5.60 | 6.30 | 7.00 | 7.70 | 8.40 | 9.20 | 10.00 | 10.80 | 11.70 | 12.60 |
| 23 | 5.20 | 5.80 | 6.50 | 7.20 | 8.00 | 8.80 | 9.70 | 10.60 | 11.50 | 12.50 | 13.60 |
| 24 | 5.50 | 6.20 | 7.00 | 7.80 | 8.60 | 9.40 | 10.30 | 11.20 | 12.10 | 13.00 | 14.10 |
| 26 | 6.20 | 7.00 | 7.80 | 8.60 | 9.50 | 10.50 | 11.50 | 12.60 | 13.75 | 15.00 | 16.30 |
| 28 | 7.00 | 7.80 | 8.60 | 9.50 | 10.50 | 11.60 | 12.80 | 14.00 | 15.20 | 16.50 | 17.90 |
| 30 | 7.70 | 8.60 | 9.50 | 10.60 | 11.80 | 13.00 | 14.30 | 15.60 | 17.00 | 18.50 | 20.00 |
| 32 | 8.50 | 9.50 | 10.50 | 11.60 | 12.85 | 14.10 | 15.50 | 17.00 | 18.60 | 20.50 | 22.00 |
| 33 | 9.00 | 10.00 | 11.15 | 12.35 | 13.65 | 15.00 | 16.45 | 18.00 | 19.65 | 21.40 | 23.10 |
| 34 | 9.40 | 10.60 | 11.80 | 13.10 | 14.45 | 15.90 | 17.40 | 19.00 | 20.70 | 22.50 | 24.20 |
| 35 | 9.85 | 11.15 | 12.45 | 13.85 | 15.25 | 16.80 | 18.35 | 20.00 | 21.70 | 23.50 | 25.30 |
| 36 | 10.30 | 11.70 | 13.10 | 14.60 | 16.10 | 17.70 | 19.30 | 21.00 | 22.00 | 24.00 | 26.00 |
| 38 | 12.80 | 14.40 | 16.00 | 17.70 | 19.50 | 21.20 | 23.00 | 24.50 | 26.00 | 28.00 | |
| 40 | 13.90 | 15.70 | 17.50 | 19.30 | 21.25 | 23.10 | 25.00 | 26.50 | 28.00 | 30.00 | |
| 42 | 15.00 | 17.00 | 19.00 | 21.00 | 23.00 | 25.00 | 27.00 | 29.00 | 31.00 | 33.00 | 35.00 |
| 44 | 17.00 | 19.00 | 21.00 | 23.00 | 25.00 | 27.00 | 29.00 | 31.00 | 33.00 | 35.00 | |
| 46 | 19.00 | 21.00 | 23.00 | 25.00 | 27.00 | 29.00 | 31.00 | 33.00 | 36.00 | 38.00 | |
| 48 | 21.00 | 23.00 | 25.00 | 27.00 | 29.00 | 31.50 | 33.90 | 36.20 | 38.50 | 40.00 | |
| 50 | — | 25.00 | 27.00 | 29.00 | 31.00 | 33.70 | 36.20 | 38.60 | 41.00 | 45.00 | |
| 52 | — | 28.00 | 30.00 | 32.00 | 34.00 | 36.00 | 38.50 | 41.00 | 43.50 | 46.00 | |
| 54 | — | 30.00 | 32.00 | 34.00 | 36.00 | 38.50 | 41.20 | 43.80 | 46.00 | 49.00 | |
| 56 | — | — | 35.00 | 37.00 | 39.00 | 41.00 | 45.00 | 46.00 | 49.00 | 52.00 | |
| 58 | — | — | 38.00 | 40.00 | 42.00 | 44.00 | 46.00 | 49.00 | 52.00 | 55.00 | |
| 60 | — | — | 41.00 | 43.00 | 45.00 | 47.00 | 49.00 | 52.00 | 55.00 | 58.00 | |
| 66 | — | — | 48.00 | 50.00 | 52.00 | 54.00 | 57.00 | 61.00 | 64.00 | 69.00 | |
| 72 | — | — | 54.00 | 56.00 | 58.00 | 62.00 | 66.00 | 70.00 | 75.00 | 80.00 | |
| 78 | — | — | — | — | 71.00 | 75.00 | 80.00 | 85.00 | 90.00 | 95.00 | |
| 84 | — | — | — | — | 85.00 | 90.00 | 96.00 | 101.00 | 107.00 | 112.00 | |

Intermediate diameters and special large and small sizes quoted on application.

WOOD SPLIT PULLEYS—CONTINUED

WIDTH OF FACE, INCHES

| Diam. In. | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 3 | 4.10 | 4.40 | 4.75 | | | | | | | | |
| 4 | 4.40 | 4.75 | 5.10 | | | | | | | | |
| 5 | 4.75 | 5.10 | 5.45 | | | | | | | | |
| 6 | 5.00 | 5.35 | 5.70 | | | | | | | | |
| 7 | 5.20 | 5.55 | 5.90 | | | | | | | | |
| 8 | 5.40 | 5.80 | 6.20 | | | | | | | | |
| 9 | 5.80 | 6.20 | 6.60 | 7.00 | 7.50 | 8.00 | 8.60 | 9.20 | | | |
| 10 | 6.20 | 6.60 | 7.00 | 7.50 | 8.00 | 8.60 | 9.20 | 9.80 | | | |
| 11 | 6.60 | 7.00 | 7.50 | 8.00 | 8.60 | 9.20 | 9.80 | 10.40 | 11.10 | 11.80 | 12.60 |
| 12 | 6.90 | 7.40 | 7.90 | 8.50 | 9.10 | 9.70 | 10.40 | 11.10 | 11.70 | 12.50 | 13.30 |
| 13 | 7.30 | 7.80 | 8.40 | 9.00 | 9.70 | 10.40 | 11.10 | 11.80 | 12.60 | 13.40 | 14.20 |
| 14 | 7.90 | 8.50 | 9.10 | 10.30 | 11.00 | 11.80 | 12.60 | 13.40 | 14.20 | 15.10 | 16.00 |
| 15 | 8.40 | 9.00 | 9.60 | 10.30 | 11.00 | 11.80 | 12.60 | 13.40 | 14.20 | 15.10 | 16.90 |
| 16 | 9.00 | 9.60 | 10.30 | 11.00 | 11.80 | 12.60 | 13.40 | 14.20 | 15.10 | 16.00 | 17.80 |
| 17 | 9.50 | 10.20 | 11.00 | 11.80 | 12.60 | 13.40 | 14.20 | 15.10 | 16.00 | 17.00 | 17.90 |
| 18 | 10.30 | 11.10 | 11.90 | 12.70 | 13.50 | 14.30 | 15.20 | 16.10 | 17.00 | 17.90 | 19.00 |
| 19 | 11.00 | 11.80 | 12.60 | 13.40 | 14.30 | 15.20 | 16.10 | 17.00 | 17.90 | 19.00 | 20.10 |
| 20 | 12.00 | 12.90 | 13.80 | 14.70 | 15.60 | 16.50 | 17.50 | 18.50 | 19.60 | 20.70 | 21.80 |
| 21 | 12.70 | 13.60 | 14.50 | 15.50 | 16.50 | 17.50 | 18.60 | 19.70 | 20.80 | 22.00 | 23.20 |
| 22 | 13.50 | 14.50 | 15.50 | 16.60 | 17.70 | 18.80 | 20.00 | 21.20 | 22.40 | 23.60 | 24.80 |
| 23 | 14.70 | 15.80 | 17.00 | 18.20 | 19.40 | 20.60 | 21.80 | 23.00 | 24.30 | 25.60 | 26.90 |
| 24 | 15.30 | 16.50 | 17.70 | 18.90 | 20.20 | 21.50 | 22.80 | 24.10 | 25.40 | 26.80 | 28.20 |
| 25 | 17.60 | 19.00 | 20.40 | 21.80 | 23.30 | 24.80 | 26.30 | 27.90 | 29.50 | 31.10 | 32.70 |
| 26 | 19.40 | 20.90 | 22.40 | 24.00 | 25.60 | 27.20 | 28.80 | 30.40 | 32.00 | 33.60 | 35.30 |
| 28 | 21.50 | 23.25 | 25.00 | 26.75 | 28.50 | 30.25 | 32.00 | 33.75 | 35.50 | 37.25 | 39.00 |
| 30 | 23.80 | 25.60 | 27.40 | 29.20 | 31.00 | 33.00 | 35.00 | 37.00 | 39.00 | 41.00 | 43.00 |
| 33 | 24.95 | 26.75 | 28.60 | 30.40 | 32.30 | 34.35 | 36.40 | 38.50 | 40.60 | 42.70 | 44.90 |
| 34 | 26.10 | 27.90 | 29.80 | 31.70 | 33.60 | 35.70 | 37.80 | 40.00 | 42.20 | 44.40 | 46.80 |
| 35 | 27.20 | 29.10 | 31.00 | 32.90 | 34.90 | 37.00 | 39.20 | 41.50 | 43.80 | 46.10 | 48.70 |
| 36 | 28.00 | 30.00 | 32.00 | 34.00 | 36.00 | 38.00 | 40.00 | 43.00 | 45.00 | 47.00 | 50.00 |
| 38 | 30.00 | 32.00 | 34.00 | 36.00 | 38.00 | 41.00 | 43.00 | 46.00 | 48.00 | 51.00 | 54.00 |
| 40 | 32.00 | 34.00 | 36.00 | 39.00 | 41.00 | 43.00 | 46.00 | 49.00 | 52.00 | 55.00 | 58.00 |
| 42 | 35.00 | 37.00 | 39.00 | 41.00 | 44.0 | 46.00 | 49.00 | 52.00 | 55.00 | 58.00 | 62.00 |
| 44 | 37.00 | 40.00 | 42.00 | 44.00 | 47.00 | 50.00 | 53.00 | 56.00 | 60.00 | 63.00 | 67.00 |
| 46 | 40.00 | 43.00 | 45.00 | 48.00 | 51.00 | 54.00 | 57.00 | 61.00 | 65.00 | 68.00 | 73.00 |
| 48 | 43.00 | 46.00 | 48.00 | 51.00 | 54.00 | 58.00 | 61.00 | 65.00 | 70.00 | 74.00 | 78.00 |
| 50 | 46.00 | 49.00 | 51.00 | 54.00 | 58.00 | 62.00 | 65.00 | 70.00 | 75.00 | 79.00 | 84.00 |
| 52 | 49.00 | 52.00 | 55.00 | 58.00 | 62.00 | 66.00 | 70.00 | 75.00 | 80.00 | 85.00 | 90.00 |
| 54 | 52.00 | 55.00 | 59.00 | 62.00 | 66.00 | 70.00 | 75.00 | 80.00 | 85.00 | 90.00 | 101.00 |
| 56 | 55.00 | 59.00 | 63.00 | 66.00 | 71.00 | 75.00 | 80.00 | 85.00 | 90.00 | 95.00 | 106.00 |
| 58 | 59.00 | 62.00 | 67.00 | 71.00 | 75.00 | 80.00 | 85.00 | 90.00 | 95.00 | 100.00 | 106.00 |
| 60 | 62.00 | 66.00 | 71.00 | 75.00 | 80.00 | 85.00 | 90.00 | 95.00 | 100.00 | 106.00 | 112.00 |
| 66 | 73.00 | 78.00 | 83.00 | 88.00 | 93.00 | 98.00 | 103.00 | 109.00 | 115.00 | 122.00 | 129.00 |
| 72 | 85.00 | 90.00 | 95.00 | 100.00 | 105.00 | 111.00 | 117.00 | 123.00 | 130.00 | 138.00 | 146.00 |
| 78 | 100.00 | 105.00 | 110.00 | 116.00 | 121.00 | 127.00 | 133.00 | 140.00 | 147.00 | 155.00 | 164.00 |
| 84 | 118.00 | 123.00 | 130.00 | 136.00 | 143.00 | 149.00 | 156.00 | 163.00 | 170.00 | 179.00 | 188.00 |

Intermediate Diameters and special large and small sizes on application.

TIGHT AND LOOSE WOOD PULLEYS

The loose pulley is furnished with an iron sleeve, accurately bored and fitted with oil chambers, so any style of grease or oil cups can be attached. Should there be any wear, it is a very simple and inexpensive operation to babbitt the sleeve or replace with a new one.

Price list of Iron Sleeves extra.

| Face of Pulley, In. | Bore | Price | Face of Pulley, In. | Bore | Price | Face of Pulley, In. | Bore | Price |
|---------------------|---------------------------------|-------|---------------------|---------------------------------|-------|---------------------|---------------------------------|-------|
| 3 | 1 ³ / ₈ | 1.85 | 5 | 1 ³ / ₈ | 2.50 | 6 | 2 ¹ / ₈ | 5.65 |
| 3 | 1 ⁷ / ₈ | 2.00 | 5 | 1 ⁷ / ₈ | 2.70 | 6 | 2 ³ / ₈ | 4.15 |
| 3 | 1 ¹¹ / ₁₆ | 2.20 | 5 | 1 ¹¹ / ₁₆ | 2.85 | 8 | 1 ⁷ / ₈ | 3.85 |
| 3 | 1 ¹⁵ / ₁₆ | 2.35 | 5 | 1 ¹⁵ / ₁₆ | 3.20 | 8 | 1 ¹¹ / ₁₆ | 4.15 |
| 4 | 1 ³ / ₈ | 2.20 | 5 | 2 ¹ / ₈ | 3.50 | 8 | 1 ¹ / ₈ | 4.70 |
| 4 | 1 ⁷ / ₈ | 2.35 | 6 | 1 ¹¹ / ₁₆ | 3.00 | 8 | 2 ³ / ₁₆ | 5.35 |
| 4 | 1 ¹¹ / ₁₆ | 2.50 | 6 | 1 ¹¹ / ₁₆ | 3.35 | 8 | 2 ¹ / ₈ | 6.00 |
| 4 | 1 ¹⁵ / ₁₆ | 2.70 | 6 | 1 ¹⁵ / ₁₆ | 3.70 | 8 | 2 ¹ / ₈ | 7.35 |

EXTRAS, TO LIST B3500**STEP CONE PULLEYS**

Step Cones built up in one, take list of each separate size diameter with face, and add 50 per cent to the list; then subject to usual discount; built solid or split.

TAPER CONE PULLEYS

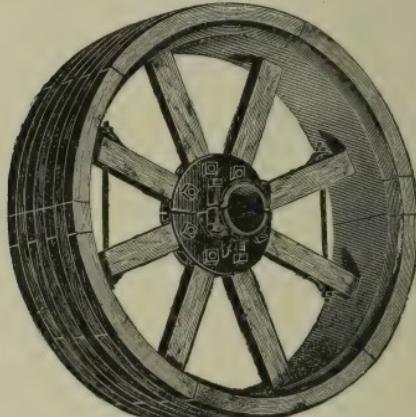
Take list of largest diameter and full width of face; subject to the regular discount.

FLANGE PULLEYS

Add to list as follows: Single Flange, 15 per cent; Double, 20 per cent; Triple, 25 per cent; subject to the regular discount.

WOOD SPLIT PULLEYS

With Malleable Iron Hubs



B3505

In the Malleable Iron Hub construction the great feature of objection found in all wooden hub pulleys, i. e., slippage on the shaft, has been overcome. No matter how thoroughly the stock in a wooden hub pulley may be kiln-dried, it is bound to gather a certain amount of dampness from the atmosphere, with the result that the continual swelling and shrinking that follow cause the pulley to become loose on the shaft. Can be furnished with set screws if desired.

The above take Standard Wood Split Pulley list. See B3500.

MAIN DRIVE IRON CENTER WOOD PULLEY

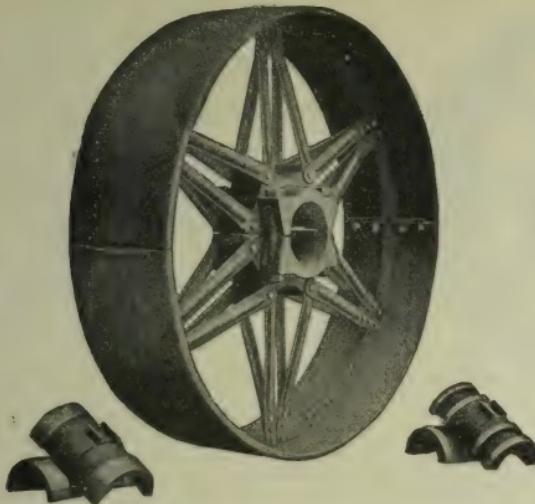
Not Illustrated

Main Drive Pulleys are constructed with extra heavy iron hubs, bored to the exact size of the shaft and keyseated, with set screws over the keyway. They weigh at least 75 per cent less than iron pulleys, and on account of the reduced friction in the bearings and the superior belt surface afforded by the wooden rim, will transmit 25 per cent more horse-power.

Prices quoted upon application.

**STEEL
SPLIT
PULLEYS**

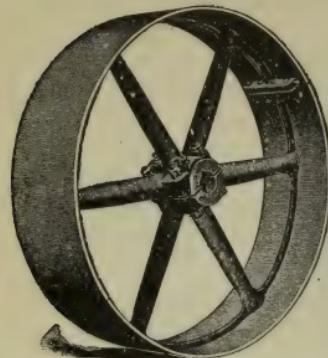
B3510



When ordering name diameter first, afterwards mention width, face, crown or straight, and bore.

| Diameter Inches | WIDTH OF FACE, INCHES | | | | | | | | | |
|--------------------|-----------------------|-------|-------|-------|-------|-------|--------|--------|--------|-------|
| | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 14 | 16 | 18 |
| 6 | 3.30 | 3.45 | 3.75 | 4.05 | ..... | ..... | ..... | ..... | ..... | ..... |
| 7 | 3.38 | 3.60 | 3.90 | 4.20 | ..... | ..... | ..... | ..... | ..... | ..... |
| 8 | 3.45 | 3.75 | 4.05 | 4.35 | 4.95 | 5.60 | ..... | ..... | ..... | ..... |
| 9 | 3.60 | 3.90 | 4.20 | 4.50 | 5.10 | 5.75 | ..... | ..... | ..... | ..... |
| 10 | 3.75 | 4.05 | 4.35 | 4.65 | 5.25 | 5.90 | 6.45 | ..... | ..... | ..... |
| 11 | 3.90 | 4.20 | 4.50 | 4.80 | 5.40 | 6.00 | 6.90 | ..... | ..... | ..... |
| 12 | 4.20 | 4.63 | 4.80 | 5.33 | 5.78 | 6.45 | 7.65 | ..... | ..... | ..... |
| 13 | 4.35 | 4.80 | 5.20 | 5.62 | 6.43 | 7.20 | 8.40 | ..... | ..... | ..... |
| 14 | 4.50 | 5.20 | 5.65 | 6.15 | 7.05 | 8.03 | 9.00 | ..... | ..... | ..... |
| 15 | 4.65 | 5.45 | 5.80 | 6.55 | 7.65 | 8.80 | 9.75 | ..... | ..... | ..... |
| 16 | 4.95 | 5.75 | 6.10 | 6.90 | 8.25 | 9.45 | 10.50 | ..... | ..... | ..... |
| 17 | 5.25 | 6.00 | 6.50 | 7.28 | 8.78 | 10.05 | 11.25 | ..... | ..... | ..... |
| 18 | 5.55 | 6.38 | 7.00 | 7.65 | 9.30 | 10.65 | 12.00 | ..... | ..... | ..... |
| 19 | 5.80 | 6.75 | 7.50 | 8.25 | 10.13 | 11.25 | 12.90 | ..... | ..... | ..... |
| 20 | 6.00 | 7.50 | 8.10 | 9.00 | 10.73 | 12.00 | 14.25 | ..... | ..... | ..... |
| 21 | 6.25 | 8.00 | 8.90 | 9.60 | 11.25 | 12.98 | 15.60 | 18.00 | 20.75 | ..... |
| 22 | 6.50 | 8.55 | 9.50 | 10.28 | 12.00 | 14.10 | 16.80 | 19.30 | 22.20 | ..... |
| 23 | 7.00 | 8.70 | 9.90 | 10.58 | 12.60 | 14.75 | 18.00 | 20.70 | 24.75 | ..... |
| 24 | 7.50 | 8.90 | 10.00 | 10.95 | 13.20 | 15.68 | 19.05 | 22.80 | 27.30 | 32.75 |
| 26 | ..... | 9.55 | 10.75 | 11.95 | 14.40 | 17.10 | 21.30 | 26.25 | 31.20 | 37.50 |
| 28 | ..... | 10.80 | 11.85 | 12.90 | 15.45 | 18.15 | 22.90 | 28.50 | 34.50 | 41.50 |
| 30 | ..... | 12.00 | 13.00 | 14.10 | 17.25 | 19.90 | 24.75 | 31.50 | 38.10 | 45.75 |
| 32 | ..... | 13.20 | 14.35 | 15.45 | 19.35 | 22.50 | 26.85 | 35.15 | 41.65 | 50.00 |
| 34 | ..... | 14.40 | 15.15 | 17.25 | 21.75 | 25.50 | 30.00 | 36.75 | 45.00 | 54.00 |
| 36 | ..... | 15.90 | 17.75 | 19.50 | 24.00 | 28.65 | 33.75 | 39.75 | 48.60 | 55.50 |
| 38 | ..... | 19.50 | 20.65 | 21.75 | 26.40 | 31.05 | 37.15 | 42.75 | 51.75 | 58.85 |
| 40 | ..... | 21.90 | 22.75 | 24.00 | 28.50 | 33.75 | 40.15 | 46.50 | 55.15 | 62.25 |
| 42 | ..... | ..... | 26.25 | 32.25 | 37.50 | 43.50 | 50.25 | 57.75 | 65.65 | ..... |
| 44 | ..... | ..... | 30.20 | 37.10 | 43.13 | 50.00 | 57.80 | 66.40 | 75.50 | ..... |
| 46 | ..... | ..... | 34.70 | 42.63 | 49.60 | 57.50 | 66.35 | 76.35 | 86.85 | ..... |
| 48 | ..... | ..... | 39.91 | 49.00 | 57.05 | 66.15 | 76.29 | 87.80 | 99.90 | ..... |
| 50 | ..... | ..... | 45.45 | 55.95 | 63.45 | 76.45 | 84.75 | 100.65 | 109.85 | ..... |
| 52 | ..... | ..... | 49.10 | 60.20 | 68.25 | 81.85 | 90.80 | 107.55 | 116.95 | ..... |
| 54 | ..... | ..... | 52.70 | 64.55 | 73.25 | 87.45 | 97.00 | 114.65 | 124.85 | ..... |
| 56 | ..... | ..... | 55.70 | 67.65 | 76.55 | 91.30 | 101.60 | 119.55 | 130.35 | ..... |
| 58 | ..... | ..... | 58.55 | 70.75 | 79.90 | 95.15 | 106.10 | 124.70 | 135.85 | ..... |

NOTE.—Larger sizes quoted on application.



SINGLE BELT IRON PULLEY

B3515

Bored, Turned and Balanced, with Key Seat
or Set Screws.

Specify first, Diameter, then Width of Face, Size
Shaft, Crown or Straight Face, Depth and Width of
Key-Way.

| Diam. in. in. in. | FACE IN INCHES | | | | | | | | | | | |
|----------------------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 14 | |
| 6 | 1.95 | 2.10 | 2.30 | 2.55 | .... | .... | .... | .... | .... | .... | .... | .... |
| 7 | 2.10 | 2.25 | 2.50 | 2.75 | .... | .... | .... | .... | .... | .... | .... | .... |
| 8 | 2.25 | 2.45 | 2.70 | 2.95 | 3.20 | 3.45 | .... | .... | .... | .... | .... | .... |
| 9 | 2.40 | 2.60 | 2.85 | 3.15 | 3.45 | 3.75 | .... | .... | .... | .... | .... | .... |
| 10 | 2.55 | 2.75 | 3.05 | 3.40 | 3.70 | 4.05 | 4.40 | 4.75 | .... | .... | .... | .... |
| 11 | 2.70 | 2.95 | 3.25 | 3.60 | 3.95 | 4.35 | 4.65 | 5.05 | .... | .... | .... | .... |
| 12 | 2.85 | 3.15 | 3.50 | 3.85 | 4.20 | 4.55 | 4.95 | 5.35 | 5.75 | 6.20 | .... | .... |
| 13 | 3.05 | 3.35 | 3.70 | 4.10 | 4.45 | 4.90 | 5.25 | 5.70 | 6.15 | 6.60 | .... | .... |
| 14 | 3.25 | 3.55 | 3.90 | 4.35 | 4.70 | 5.20 | 5.60 | 6.10 | 6.55 | 7.05 | .... | .... |
| 15 | 3.40 | 3.75 | 4.15 | 4.60 | 5.05 | 5.50 | 5.95 | 6.45 | 6.95 | 7.50 | .... | .... |
| 16 | 3.60 | 3.95 | 4.40 | 4.90 | 5.35 | 5.85 | 6.30 | 6.85 | 7.40 | 8.00 | .... | .... |
| 17 | 3.80 | 4.20 | 4.70 | 5.20 | 5.70 | 6.20 | 6.75 | 7.30 | 7.90 | 8.50 | .... | .... |
| 18 | 4.00 | 4.45 | 4.95 | 5.50 | 6.05 | 6.60 | 7.15 | 7.75 | 8.40 | 9.10 | .... | .... |
| 19 | 4.25 | 4.70 | 5.25 | 5.85 | 6.45 | 7.05 | 7.65 | 8.30 | 9.00 | 9.75 | .... | .... |
| 20 | 4.45 | 4.95 | 5.55 | 6.20 | 6.85 | 7.50 | 8.15 | 8.85 | 9.60 | 10.40 | .... | .... |
| 21 | 4.70 | 5.25 | 5.85 | 6.55 | 7.25 | 7.95 | 8.65 | 9.40 | 10.20 | 11.05 | .... | .... |
| 22 | 4.90 | 5.55 | 6.15 | 6.90 | 7.65 | 8.40 | 9.15 | 9.95 | 10.80 | 11.70 | .... | .... |
| 23 | 5.15 | 5.80 | 6.50 | 7.25 | 8.05 | 8.85 | 9.65 | 10.50 | 11.45 | 12.40 | .... | .... |
| 24 | 5.40 | 6.10 | 6.85 | 7.65 | 8.45 | 9.30 | 10.20 | 11.10 | 12.10 | 13.15 | 15.70 | .... |
| 25 | 5.70 | 6.50 | 7.25 | 8.10 | 8.95 | 9.90 | 10.85 | 11.85 | 12.90 | 14.05 | 16.65 | .... |
| 26 | 6.00 | 6.90 | 7.65 | 8.60 | 9.45 | 10.55 | 11.50 | 12.60 | 13.75 | 15.00 | 17.65 | .... |
| 27 | 6.35 | 7.30 | 8.15 | 9.05 | 10.00 | 11.10 | 12.20 | 13.35 | 14.60 | 15.90 | 18.60 | .... |
| 28 | 6.75 | 7.70 | 8.50 | 9.50 | 10.60 | 11.70 | 12.90 | 13.10 | 15.45 | 16.85 | 19.55 | .... |
| 29 | 7.25 | 8.10 | 9.00 | 10.00 | 11.15 | 12.35 | 13.60 | 14.90 | 16.30 | 17.70 | 20.55 | .... |
| 30 | 7.60 | 8.55 | 9.45 | 10.55 | 11.75 | 13.00 | 14.30 | 15.75 | 17.15 | 18.60 | 21.55 | .... |
| 31 | 8.05 | 8.95 | 9.95 | 11.10 | 12.35 | 13.70 | 15.10 | 16.55 | 18.05 | 19.55 | 22.00 | .... |
| 32 | 8.45 | 9.40 | 10.45 | 11.65 | 12.95 | 14.40 | 15.90 | 17.40 | 19.00 | 20.55 | 23.70 | .... |
| 33 | 8.90 | 9.90 | 11.00 | 12.25 | 13.60 | 15.05 | 16.70 | 18.25 | 19.90 | 21.50 | 24.80 | .... |
| 34 | 9.40 | 10.40 | 11.50 | 12.90 | 14.35 | 15.85 | 17.55 | 19.10 | 20.85 | 22.50 | 25.90 | .... |
| 35 | 9.90 | 10.90 | 12.10 | 13.50 | 15.00 | 16.60 | 18.25 | 19.95 | 21.75 | 23.50 | 27.00 | .... |
| 36 | 10.40 | 11.40 | 12.65 | 14.10 | 15.70 | 17.35 | 19.10 | 20.85 | 22.70 | 24.50 | 28.10 | .... |
| 38 | .... | 12.55 | 13.95 | 15.60 | 17.95 | 19.05 | 20.90 | 22.80 | 24.75 | 26.65 | 30.50 | .... |
| 40 | .... | 13.70 | 15.30 | 17.10 | 18.90 | 20.80 | 22.75 | 24.75 | 26.60 | 28.80 | 32.90 | .... |
| 42 | .... | 14.90 | 16.70 | 18.60 | 20.55 | 22.55 | 24.60 | 26.70 | 28.85 | 31.00 | 35.30 | .... |
| 44 | .... | 16.25 | 18.20 | 20.25 | 22.30 | 24.45 | 26.60 | 28.80 | 31.10 | 33.40 | 37.90 | .... |
| 46 | .... | 17.65 | 19.70 | 21.85 | 24.05 | 26.35 | 28.60 | 30.95 | 33.40 | 35.80 | 40.60 | .... |
| 48 | .... | 19.00 | 21.20 | 23.50 | 25.85 | 28.25 | 30.65 | 33.15 | 35.70 | 38.20 | 43.30 | .... |
| 50 | .... | 22.80 | 25.30 | 27.75 | 30.25 | 32.80 | 35.45 | 38.10 | 40.80 | 46.20 | .... | .... |
| 52 | .... | 24.50 | 27.10 | 29.65 | 32.30 | 35.00 | 37.75 | 40.50 | 43.40 | 49.20 | .... | .... |
| 54 | .... | 26.20 | 28.90 | 31.65 | 34.40 | 37.20 | 40.05 | 43.00 | 46.00 | 52.20 | .... | .... |
| 56 | .... | .... | 30.85 | 33.55 | 36.30 | 39.25 | 42.25 | 45.45 | 48.75 | 55.40 | .... | .... |
| 58 | .... | .... | 32.80 | 35.50 | 38.35 | 41.35 | 44.55 | 47.95 | 51.50 | 58.60 | .... | .... |
| 60 | .... | .... | 34.80 | 37.50 | 40.35 | 43.45 | 46.85 | 50.45 | 54.20 | 61.80 | .... | .... |
| 62 | .... | .... | 36.70 | 39.70 | 42.85 | 45.85 | 49.75 | 53.55 | 57.40 | 65.40 | .... | .... |
| 64 | .... | .... | 38.60 | 41.90 | 45.35 | 48.30 | 52.75 | 56.65 | 60.70 | 69.10 | .... | .... |
| 66 | .... | .... | 40.50 | 44.20 | 47.95 | 51.80 | 55.75 | 59.80 | 64.00 | 72.70 | .... | .... |
| 68 | .... | .... | 42.80 | 46.70 | 50.60 | 54.60 | 58.70 | 62.90 | 67.30 | 76.30 | .... | .... |
| 70 | .... | .... | 45.10 | 49.20 | 53.30 | 57.40 | 61.70 | 66.05 | 70.60 | 80.05 | .... | .... |

DOUBLE-BELT IRON PULLEYS

B3516

Bored, Turned and Balanced, with Key Seat or Set Screws

State first Diameter of Pulley, then Width of Face and Size of Shaft, Crown or Straight Face. Depth and Width of Key-way.

For 7 in., 9 in., 11 in., 13 in., 15 in., 17 in., 19 in., 21 in. and 23 in. Face, see note.

| Diam. in in. | *FACE IN INCHES. (For Odd Inch face, see Note.) | | | | | | | | | |
|-----------------|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| 12 | 5.25 | 6.35 | 7.55 | 8.75 | 10.10 | 11.50 | 13.00 | ..... | ..... | ..... |
| 13 | 5.60 | 6.80 | 8.10 | 9.40 | 10.85 | 12.40 | 14.00 | 15.70 | ..... | ..... |
| 14 | 5.95 | 7.20 | 8.60 | 10.00 | 11.60 | 13.25 | 15.00 | 16.80 | ..... | ..... |
| 15 | 6.30 | 7.65 | 9.15 | 10.70 | 12.35 | 14.15 | 16.00 | 17.90 | ..... | ..... |
| 16 | 6.70 | 8.20 | 9.90 | 11.45 | 13.25 | 15.15 | 17.15 | 19.15 | ..... | ..... |
| 17 | 7.15 | 8.75 | 10.45 | 12.25 | 14.15 | 16.15 | 18.25 | 20.40 | ..... | ..... |
| 18 | 7.60 | 9.30 | 11.10 | 13.05 | 15.10 | 17.20 | 19.40 | 21.70 | ..... | ..... |
| 19 | 8.10 | 9.95 | 11.95 | 14.00 | 16.25 | 18.50 | 20.90 | 23.35 | ..... | ..... |
| 20 | 8.60 | 10.60 | 12.80 | 15.00 | 17.40 | 19.80 | 22.40 | 25.60 | 27.70 | 30.60 |
| 21 | 9.10 | 11.30 | 13.60 | 16.00 | 18.55 | 21.10 | 23.90 | 26.65 | 29.60 | 32.70 |
| 22 | 9.60 | 12.00 | 14.50 | 17.00 | 19.70 | 22.40 | 25.40 | 28.30 | 31.50 | 34.80 |
| 23 | 10.10 | 12.70 | 15.35 | 18.00 | 20.85 | 22.75 | 26.90 | 29.95 | 33.45 | 36.90 |
| 24 | 10.65 | 13.40 | 16.20 | 19.00 | 22.00 | 25.10 | 28.40 | 31.70 | 35.40 | 39.00 |
| 25 | 11.25 | 14.15 | 17.10 | 20.05 | 23.25 | 26.60 | 30.10 | 33.60 | 37.45 | 41.20 |
| 26 | 11.90 | 14.90 | 18.00 | 21.10 | 24.55 | 28.10 | 31.80 | 35.55 | 39.75 | 43.45 |
| 27 | 12.50 | 15.65 | 18.90 | 22.20 | 25.80 | 29.60 | 33.55 | 37.50 | 41.70 | 45.70 |
| 28 | 13.15 | 16.40 | 19.80 | 23.30 | 27.10 | 31.10 | 35.25 | 39.45 | 43.75 | 47.90 |
| 29 | 13.85 | 17.15 | 20.70 | 24.40 | 28.40 | 32.60 | 37.00 | 41.40 | 45.80 | 50.15 |
| 30 | 14.55 | 18.00 | 21.60 | 25.50 | 29.70 | 34.20 | 38.70 | 43.25 | 47.80 | 52.40 |
| 31 | 15.30 | 19.00 | 22.70 | 26.75 | 31.15 | 35.80 | 40.50 | 45.35 | 49.90 | 54.60 |
| 32 | 16.05 | 19.85 | 23.85 | 28.00 | 32.65 | 37.45 | 42.30 | 47.45 | 52.00 | 56.85 |
| 33 | 16.80 | 20.80 | 24.95 | 29.25 | 34.10 | 39.05 | 44.10 | 49.55 | 54.10 | 59.05 |
| 34 | 17.60 | 21.75 | 26.10 | 30.50 | 35.60 | 40.70 | 45.90 | 51.65 | 56.20 | 61.30 |
| 35 | 18.40 | 22.75 | 27.20 | 31.80 | 37.05 | 42.35 | 47.70 | 53.75 | 58.30 | 63.65 |
| 36 | 19.20 | 23.70 | 28.30 | 33.10 | 38.55 | 44.00 | 49.50 | 55.90 | 60.40 | 65.80 |
| 38 | 21.05 | 25.90 | 30.80 | 35.95 | 41.65 | 49.15 | 53.50 | 59.80 | 65.05 | 70.85 |
| 40 | 22.90 | 28.10 | 33.30 | 38.75 | 44.80 | 52.65 | 57.50 | 63.70 | 69.70 | 75.90 |
| 42 | 24.80 | 30.30 | 35.85 | 41.60 | 47.95 | 54.40 | 61.00 | 67.60 | 74.30 | 81.00 |
| 44 | 26.85 | 32.70 | 38.65 | 44.90 | 51.60 | 58.50 | 65.50 | 72.60 | 79.50 | 86.65 |
| 46 | 28.90 | 35.15 | 41.55 | 48.20 | 55.30 | 62.60 | 70.00 | 77.40 | 84.80 | 92.30 |
| 48 | 31.00 | 37.65 | 44.45 | 51.50 | 59.00 | 66.70 | 74.50 | 82.30 | 90.10 | 98.00 |
| 50 | 33.30 | 40.30 | 47.45 | 54.80 | 62.70 | 70.85 | 79.15 | 87.40 | 95.70 | 104.10 |
| 52 | 35.65 | 43.00 | 50.50 | 58.15 | 66.45 | 75.05 | 83.80 | 92.50 | 101.30 | 110.30 |
| 54 | 37.90 | 45.70 | 53.60 | 61.50 | 70.25 | 79.25 | 88.50 | 97.70 | 107.00 | 116.50 |
| 56 | 40.65 | 48.50 | 56.60 | 65.00 | 74.35 | 83.55 | 93.50 | 103.25 | 113.10 | 123.15 |
| 58 | 43.25 | 51.30 | 59.65 | 68.50 | 78.45 | 87.85 | 98.50 | 108.85 | 119.25 | 129.80 |
| 60 | 46.00 | 54.10 | 62.75 | 72.00 | 82.55 | 92.15 | 103.50 | 114.45 | 125.45 | 136.50 |
| 62 | 48.30 | 57.10 | 66.30 | 76.00 | 86.95 | 97.25 | 108.70 | 120.35 | 131.85 | 143.20 |
| 64 | 50.60 | 60.10 | 69.90 | 80.00 | 91.35 | 102.35 | 113.85 | 126.25 | 138.30 | 150.90 |
| 66 | 53.00 | 63.15 | 73.50 | 84.00 | 95.75 | 107.55 | 119.50 | 132.15 | 144.80 | 157.50 |
| 68 | 55.70 | 66.25 | 77.10 | 88.20 | 100.25 | 112.55 | 125.10 | 138.35 | 151.50 | 165.00 |
| 70 | 58.40 | 69.25 | 80.70 | 92.40 | 104.85 | 117.65 | 130.80 | 144.55 | 158.25 | 172.50 |
| 72 | 61.00 | 72.55 | 84.30 | 96.50 | 109.45 | 122.75 | 136.50 | 150.60 | 165.00 | 179.50 |
| 74 | ..... | 75.75 | 88.50 | 101.00 | 114.45 | 128.25 | 142.50 | 157.10 | 172.00 | 187.00 |
| 76 | ..... | 79.05 | 92.70 | 105.50 | 119.45 | 133.75 | 148.45 | 163.70 | 179.00 | 194.50 |
| 80 | ..... | 85.95 | 99.85 | 114.30 | 129.50 | 144.95 | 160.80 | 177.10 | 193.40 | 210.00 |
| 96 | ..... | 117.10 | 134.75 | 153.00 | 172.10 | 191.75 | 212.50 | 233.00 | 254.50 | 276.00 |

* Intermediate widths, add one-half the difference between next smaller and larger widths, to price of the smaller.

CAST-IRON PULLEYS, CONTINUEDAdditional price to be added to list price for **Finished Split Pulleys**

| Diameter in inches | Face in inches | Price | Diameter in inches | Face in inches | Price | Diameter in inches | Face in inches | Price | |
|-----------------------|-------------------|-------|-----------------------|-------------------|-------|-----------------------|-------------------|---------|-------|
| 8 to 10 | 2 to 3 | 1.30 | 24 to 30 | 7 to 10 | 5.40 | 48 to 60 | 7 to 10 | 13.00 | |
| | 4 to 6 | 1.75 | | 11 to 14 | 7.25 | | 11 to 14 | 18.00 | |
| | 7 to 10 | 2.15 | | 15 to 20 | 10.00 | | 15 to 20 | 25.00 | |
| | 11 to 14 | 3.10 | | 21 to 30 | 14.00 | | 21 to 30 | 34.50 | |
| | 15 to 20 | 4.00 | | 31 to 36 | 4.50 | | 31 to 40 | 48.00 | |
| | 2 to 3 | 1.50 | | 5 to 6 | 5.60 | | 61 to 84 | 7 to 10 | 20.00 |
| | 4 to 6 | 2.20 | | 7 to 10 | 6.75 | | 11 to 14 | 26.00 | |
| | 7 to 10 | 2.85 | | 11 to 14 | 9.80 | | 15 to 20 | 35.00 | |
| | 11 to 14 | 4.00 | | 15 to 20 | 13.00 | | 21 to 30 | 48.00 | |
| | 15 to 20 | 5.25 | | 21 to 30 | 19.00 | | 31 to 40 | 64.00 | |
| 19 to 23 | 3 to 4 | 2.65 | 37 to 47 | 3 to 4 | 6.50 | 85 to 120 | 11 to 14 | 38.00 | |
| | 5 to 6 | 3.40 | | 5 to 6 | 7.50 | | 15 to 20 | 53.50 | |
| | 7 to 10 | 4.05 | | 7 to 10 | 9.90 | | 21 to 30 | 70.00 | |
| | 11 to 14 | 5.60 | | 13 to 14 | 18.50 | | 31 to 40 | 90.00 | |
| | 15 to 20 | 7.30 | | 15 to 20 | 18.00 | | | | |
| | 21 to 30 | 11.00 | | 21 to 30 | 27.00 | | | | |
| | 3 to 4 | 3.60 | | 31 to 40 | 37.00 | | | | |
| 24 to 30 | 5 to 6 | 4.40 | 48 to 60 | 5 to 6 | 10.00 | | | | |
| | 3 to 4 | 3.60 | | | | | | | |
| 5 to 6 | 4.40 | | | | | | | | |

Pulleys above 50-inch diameter will be furnished in double belt only.

Additional price to be added to the list price for **Tight and Loose Pulleys per pair, and Finished Flange Pulleys each.**

| Diameter in inches | Price Tight and Loose Pulleys | Price Flanged Pulleys | Diameter in inches | Price Tight and Loose Pulleys | Price Flanged Pulleys |
|-----------------------|-------------------------------------|-----------------------------|-----------------------|-------------------------------------|-----------------------------|
| 6 to 8 | 1.60 | 4.65 | 49 to 52 | 9.30 | 33.00 |
| 9 to 10 | 1.95 | 5.20 | 53 to 56 | 10.00 | 36.30 |
| 11 to 12 | 2.30 | 5.75 | 57 to 60 | 10.70 | 40.70 |
| 13 to 14 | 2.65 | 6.30 | 61 to 66 | 11.70 | 46.20 |
| 15 to 16 | 3.00 | 7.15 | 67 to 72 | 12.70 | 51.70 |
| 17 to 18 | 3.30 | 8.00 | 73 to 78 | 13.70 | 57.20 |
| 19 to 20 | 3.70 | 8.80 | 79 to 84 | 14.70 | 62.70 |
| 21 to 22 | 4.05 | 9.90 | 85 to 90 | 15.70 | 68.20 |
| 23 to 24 | 4.40 | 11.60 | 91 to 96 | 16.70 | 73.70 |
| 25 to 26 | 4.75 | 12.10 | 97 to 102 | 17.70 | 79.70 |
| 27 to 28 | 5.10 | 13.75 | 103 to 108 | 18.70 | 85.80 |
| 29 to 30 | 5.45 | 15.40 | 109 to 114 | 19.70 | 91.30 |
| 31 to 32 | 5.80 | 17.05 | 115 to 120 | 20.70 | 96.80 |
| 33 to 34 | 6.15 | 18.70 | 121 to 126 | 21.70 | 102.30 |
| 35 to 36 | 6.50 | 20.35 | 127 to 132 | 22.70 | 107.80 |
| 37 to 40 | 7.20 | 23.10 | 133 to 138 | 23.70 | 113.80 |
| 41 to 44 | 7.90 | 26.40 | 139 to 144 | 24.70 | 119.80 |
| 45 to 48 | 8.60 | 29.70 | | | |

Pulleys with one flange only one-half that given above.

Pulleys with three flanges one-half more than given above.

Maximum Bores for Standard Pulleys

| Diam. Pulley | inches | 6 to 9 | 10 to 15 | 16 to 20 | 21 to 30 | 31 to 42 | 43 to 48 | 49 to 60 |
|--|--------|-----------------|-------------------|------------------|-------------------|------------------|-------------------|-------------------|
| Bore | inches | 2 $\frac{7}{8}$ | 2 $\frac{15}{16}$ | 3 $\frac{7}{16}$ | 3 $\frac{15}{16}$ | 4 $\frac{7}{16}$ | 4 $\frac{15}{16}$ | 5 $\frac{15}{16}$ |
| For each $\frac{1}{4}$ in. larger bore, or $\frac{1}{4}$ " fraction Add per cent | { | 1 $\frac{1}{4}$ | 1 $\frac{1}{4}$ | 1 $\frac{1}{2}$ | 1 $\frac{1}{2}$ | 1 $\frac{1}{2}$ | 1 $\frac{1}{2}$ | 1 |

Pulleys with bores larger than the maximum will be furnished in double belt only.

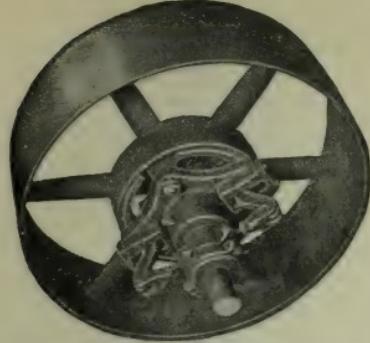
CAST-IRON FRICTION CLUTCH PULLEYS

B3520

Note.—Additional charge for high speed as follows: Over 350 revolutions, 10 per cent; over 600 revolutions 20 per cent. When a clutch pulley is intended for high speed, to get the benefit of our guaranty, that fact must be mentioned in the order. High speed clutch pulleys should have bronze sleeves.

| | Diameter | Face | PRICE | | Length of Hub | SPACE ON SHAFT | | Diameter | PRICE | | Length of Hub | SPACE ON SHAFT | |
|----|----------|-------|-------------|-------------|---------------|----------------|-------------|----------|-------------|-------------|---------------|----------------|-------------|
| | | | Single Belt | Double Belt | | Single Belt | Double Belt | | Single Belt | Double Belt | | Single Belt | Double Belt |
| 10 | 3 | 24.00 | 27.00 | 16 | 16 | 12 | 22 | 8 | 47.50 | 53.45 | 7 | 19 1/4 | 22 |
| | 4 | 25.50 | 28.70 | 16 | | | | 10 | 52.30 | 58.85 | 9 | 21 1/4 | 24 |
| | 5 | 27.00 | 30.40 | 17 | | | | 12 | 57.00 | 64.15 | 10 | 22 1/4 | 26 1/2 |
| | 6 | 28.50 | 32.05 | 17 | | | | 4 | 40.20 | 45.25 | 6 | 17 1/2 | 17 1/2 |
| | 8 | 30.50 | 34.30 | 17 | | | | 5 | 44.40 | 49.95 | 6 | 17 1/2 | 18 1/4 |
| | 3 | 25.00 | 28.10 | 16 | | | | 6 | 49.00 | 55.15 | 6 | 17 1/2 | 18 1/4 |
| | 4 | 26.50 | 29.80 | 16 | | | | 8 | 54.20 | 61.00 | 7 | 19 1/4 | 22 |
| | 5 | 28.00 | 31.50 | 17 | | | | 10 | 59.80 | 67.30 | 9 | 21 1/4 | 24 |
| | 6 | 30.00 | 33.75 | 17 | | | | 12 | 64.60 | 72.80 | 10 | 25 | 26 1/2 |
| | 8 | 32.00 | 36.00 | 17 | | | | 14 | 69.40 | 78.10 | 11 | 25 | 27 1/2 |
| 12 | 3 | 25.50 | 28.70 | 16 | 16 | 12 | 26 | 4 | 43.70 | 49.15 | 6 | 17 1/2 | 18 1/4 |
| | 4 | 27.50 | 30.95 | 16 | | | | 5 | 49.40 | 55.60 | 6 | 17 1/2 | 18 1/4 |
| | 5 | 28.70 | 32.30 | 17 | | | | 6 | 55.10 | 62.00 | 6 | 17 1/2 | 18 1/4 |
| | 6 | 30.80 | 34.65 | 17 | | | | 8 | 60.80 | 68.40 | 7 | 19 1/4 | 22 |
| | 8 | 34.20 | 38.50 | 17 1/2 | | | | 10 | 67.50 | 75.95 | 9 | 21 1/2 | 25 1/2 |
| | 3 | 28.00 | 31.50 | 16 | | | | 12 | 73.00 | 82.80 | 10 | 25 | 26 1/2 |
| | 4 | 29.20 | 32.85 | 17 | | | | 14 | 78.90 | 88.75 | 11 | 26 | 27 1/2 |
| | 5 | 30.80 | 34.65 | 17 | | | | 4 | 48.50 | 54.55 | 6 | 17 1/2 | 18 1/4 |
| 14 | 6 | 33.80 | 38.05 | 17 1/2 | 17 1/2 | 12 | 28 | 5 | 53.20 | 59.85 | 6 | 17 1/2 | 18 1/4 |
| | 8 | 37.00 | 41.65 | 17 1/2 | | | | 6 | 59.50 | 66.95 | 6 | 17 1/2 | 18 1/4 |
| | 10 | 39.70 | 44.65 | 18 1/2 | | | | 8 | 63.60 | 71.55 | 7 | 19 1/4 | 22 |
| | 3 | 29.50 | 33.20 | 17 | | | | 10 | 69.40 | 78.10 | 9 | 24 | 25 1/2 |
| | 4 | 31.30 | 35.25 | 17 | | | | 12 | 75.00 | 84.40 | 10 | 25 | 26 1/2 |
| | 5 | 33.25 | 37.40 | 17 | | | | 14 | 81.70 | 91.90 | 11 | 26 | 29 |
| | 6 | 37.00 | 41.65 | 17 1/2 | | | | 5 | 56.00 | 63.00 | 6 | 17 1/2 | 18 1/4 |
| | 8 | 41.00 | 46.15 | 17 1/2 | | | | 6 | 60.80 | 68.40 | 7 | 19 1/4 | 22 |
| 16 | 10 | 42.75 | 48.10 | 9 | 20 1/2 | 12 | 30 | 8 | 66.50 | 74.80 | 8 | 20 1/4 | 23 |
| | 12 | 46.50 | 52.30 | 10 | | | | 10 | 73.20 | 82.35 | 9 | 21 1/4 | 25 1/2 |
| | 3 | 30.70 | 34.55 | 6 | | | | 12 | 79.40 | 89.35 | 10 | 25 | 26 1/2 |
| | 4 | 32.70 | 36.80 | 6 | | | | 14 | 88.40 | 99.45 | 11 | 26 | 29 |
| | 5 | 34.20 | 38.50 | 6 | | | | 16 | 94.60 | 106.45 | 12 | 28 1/2 | 31 |
| | 6 | 38.00 | 42.70 | 6 | | | | 4 | 55.10 | 62.00 | 6 | 17 1/2 | 18 1/4 |
| | 8 | 41.80 | 47.05 | 6 | | | | 5 | 59.80 | 67.30 | 6 | 17 1/2 | 18 1/4 |
| | 10 | 45.60 | 51.30 | 9 | | | | 6 | 65.50 | 73.70 | 7 | 19 1/4 | 22 |
| 18 | 12 | 50.10 | 56.35 | 10 | 22 1/2 | 12 | 32 | 8 | 70.30 | 79.10 | 8 | 20 1/4 | 23 |
| | 3 | 33.60 | 37.80 | 6 | | | | 10 | 77.00 | 86.65 | 9 | 24 | 25 1/2 |
| | 4 | 33.60 | 37.80 | 6 | | | | 12 | 84.00 | 94.50 | 10 | 26 1/2 | 28 |
| | 5 | 35.90 | 40.40 | 6 | | | | 14 | 92.00 | 104.20 | 11 | 27 1/2 | 29 |
| | 6 | 40.00 | 45.00 | 6 | | | | 16 | 100.70 | 113.30 | 12 | 28 1/2 | 31 |
| | 8 | 44.60 | 50.20 | 6 | | | | 4 | 57.80 | 65.55 | 6 | 17 1/2 | 18 1/4 |
| | 10 | 49.40 | 55.60 | 9 | | | | 5 | 63.20 | 71.10 | 6 | 17 1/2 | 18 1/4 |
| | 12 | 53.20 | 59.85 | 10 | | | | 6 | 69.00 | 77.65 | 7 | 19 1/4 | 22 |
| 22 | 4 | 36.00 | 40.50 | 6 | 17 1/2 | 12 | 34 | 8 | 74.10 | 83.35 | 8 | 20 1/4 | 24 1/2 |
| | 5 | 39.40 | 44.35 | 6 | | | | 10 | 83.60 | 94.05 | 9 | 24 | 25 1/2 |
| | 6 | 42.20 | 47.50 | 6 | | | | 12 | 90.20 | 101.50 | 10 | 25 | 28 |

(Continued on next page)



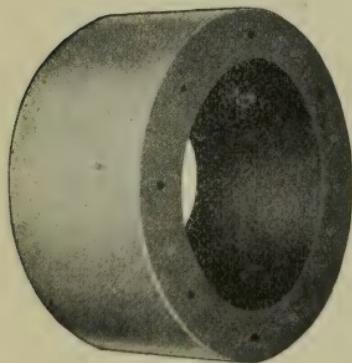
(Continued from preceding page.)

| Diameter | Face | PRICE | | | Length of Hub | SPACE ON SHAFT | | Diameter | PRICE | | | Length of Hub | SPACE ON SHAFT | |
|----------|------|-------------|-------------|-------------|---------------|----------------|-------------|----------|--------|-------------|-------------|---------------|----------------|-------------|
| | | Single Belt | Double Belt | Single Belt | | Single Belt | Double Belt | | Face | Single Belt | Double Belt | | Single Belt | Double Belt |
| 34 | 14 | 100.00 | 112.50 | 11 | 27½ | 29 | 36 | 10 | 92.20 | 103.75 | 9 | 24 | 25½ | |
| | 16 | 107.80 | 121.00 | 12 | 30 | 31 | | 12 | 98.80 | 111.15 | 10 | 25 | 28 | |
| 36 | 4 | 63.20 | 71.10 | 6 | 17½ | 18¼ | | 14 | 107.60 | 121.05 | 11 | 27½ | 30 | |
| | 5 | 70.80 | 79.65 | 6 | 18¼ | 21 | | 16 | 116.00 | 130.50 | 12 | 30 | 31 | |
| 36 | 6 | 77.00 | 86.65 | 7 | 19¼ | 22 | | 18 | 126.40 | 142.20 | 14 | 32 | 33 | |
| | 8 | 82.60 | 92.95 | 8 | 23 | 24½ | | 20 | 144.40 | 162.45 | 14 | 34 | 36 | |

PAPER FRICTIONS COMPLETE AND FILLERS ONLY FOR SAW MILLS

Spur Bevel or Miter

Feed Friction Filler
without Flanges



B3525

Miter Friction
with Flanges



B3526

When ordering, always state whether wanted complete with flanges, or whether Filler only is wanted.

Our Paper Frictions are made solid, bored and turned perfectly true to any desired size or shape, spur, bevel, or miter face. Bolt holes in Rolls or Fillers drilled to specifications.

When ordering Spur Paper Frictions with flanges, state diameter and face of paper, bore of hub, and size of key seat. For Bevels or Miters, state large diameter, width of face and degree of angle of paper, bore of hub, and size of key seat. The angle to be measured is that formed by the large diameter and face of the paper filler.

When inconvenient to measure the angle, give also the small diameter and thickness of paper between flanges.

When ordering Paper Friction Rolls or Fillers, give dimensions, and state number and size of bolts, also give either the radius or the diameter of circle on which bolt holes are to be drilled, measuring to centre of holes. Send paper pattern when the holes in flanges have not been accurately spaced.

Friction Fillers are made of Straw Fibre, Tarred Fibre, or Leather Fibre (customer's choice) but unless otherwise specified Straw Fibre is furnished.

Backing Frictions, with flanges to run loose on shafts, are made self-oiling. Fillers for renewing Saw Mill Feed Frictions are made solid, bored and turned to desired sizes, with bolt holes drilled, ready to place in flanges.

Prices Quoted on Application.

SPROCKET WHEEL

B3530

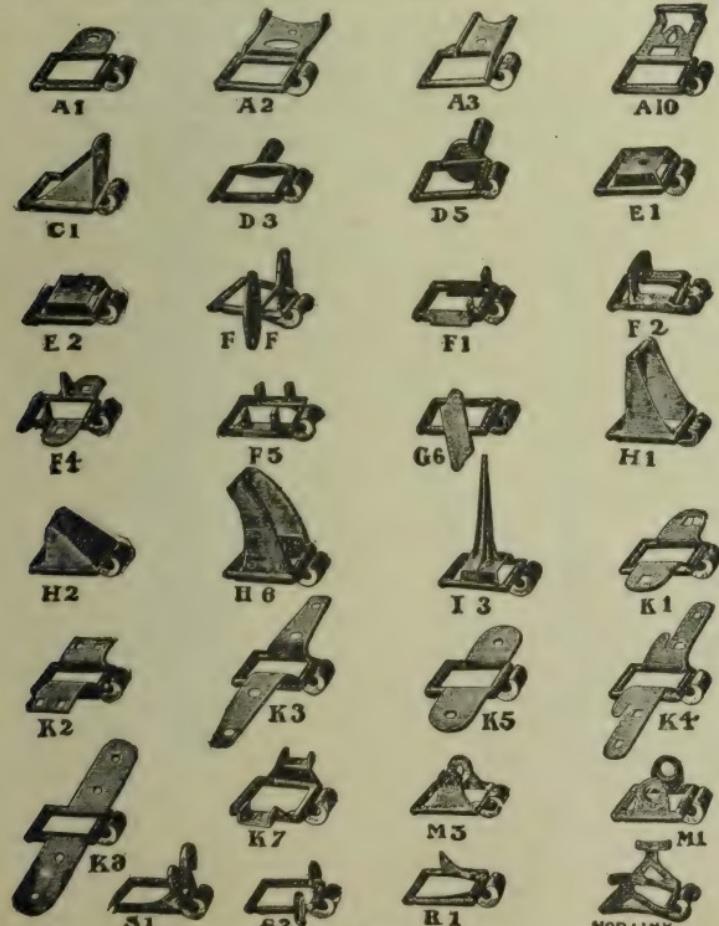
Prices on application.

When ordering state size of chain (number), *Pitch diameter of wheel, Number of teeth on wheel, Size of bore, and if they are to be Set-Screwed or Key-Seated.

Split Wheels can be furnished at special price.

Sprocket Wheels can be furnished with Friction or Jaw Clutches at special price.

ATTACHMENTS AS USUALLY MADE FOR CHAIN BELTING

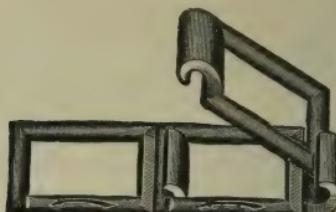


This cut shows only a few of the more common styles. Can furnish others for special requirements.

Prices quoted on application.

* Note.—The pitch diameter of wheel is measured about half way between bottom and top of sprocket or tooth.

DETACHABLE LINK CHAIN



B3535

This chain is standard the world over. It is interchangeable with all standard links, and works upon standard sprocket wheels of corresponding numbers.

STANDARD LIST

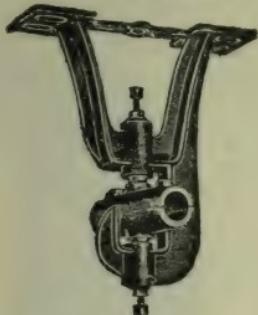
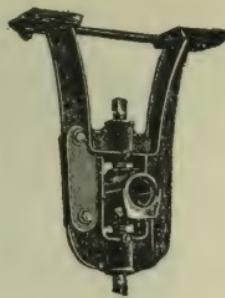
Adopted Jan. 1, 1907

| Number | Price Per Foot | Couplers Per Pair | Links per Foot | Pitch in Inches | Approximate Working Strain in Pounds | Appr. Equiv. in Leather Belting Inches |
|--------|-------------------|----------------------|-------------------|--------------------|---|---|
| 25 | .11 | .11 | 13.3 | .902 | 75 | 1 |
| 32 | .11 | .14 | 10.4 | 1.153 | 150 | 1½ |
| 33 | .11 | .13 | 8.6 | 1.395 | 200 | 2 |
| 34 | .11 | .13 | 8.6 | 1.395 | 225 | 2½ |
| 35 | .11 | .16 | 7.4 | 1.621 | 250 | 2½ |
| 42 | .12 | .16 | 8.8 | 1.363 | 300 | 3 |
| 45 | .11 | .16 | 7.4 | 1.621 | 350 | 3½ |
| 51 | .17 | .16 | 10.4 | 1.153 | 375 | 3½ |
| 52 | .18 | .16 | 8 | 1.5 | 500 | 4 |
| 55 | .16 | .16 | 7.4 | 1.621 | 450 | 4 |
| 57 | .18 | .19 | 5.2 | 2.307 | 600 | 6 |
| 62 | .22 | .22 | 7.3 | 1.643 | 650 | 6½ |
| 66 | .23 | .22 | 6 | 2. | 700 | 6½ |
| 67 | .23 | .22 | 5.2 | 2.307 | 700 | 7 |
| 75 | .24 | .19 | 4.6 | 2.609 | 750 | 7½ |
| 77 | .25 | .22 | 5.2 | 2.307 | 800 | 8 |
| 78 | .34 | .25 | 4.6 | 2.609 | 1,000 | 10 |
| 83 | .35 | .32 | 3 | 4. | 1,200 | 12 |
| 85 | .44 | .44 | 3 | 4. | 1,300 | 9 |
| 88 | .43 | .28 | 4.6 | 2.609 | 1,200 | 8 |
| 93 | .49 | .44 | 3 | 4. | 1,600 | 10 |
| 95 | .53 | .54 | 3 | 4. | 1,600 | 10 |
| 103 | .67 | .58 | 3.93 | 3.056 | 1,800 | 12 |
| 105 | .49 | .... | 2 | 6. | 1,500 | 10 |
| 108 | .63 | .79 | 2.55 | 4.706 | 1,800 | 12 |
| 110 | .74 | .92 | 2.55 | 4.706 | 2,000 | 13 |
| 114 | .85 | .84 | 3.7 | 3.243 | 2,000 | 13 |
| 122 | 1.13 | 1.58 | 2 | 6. | 2,200 | 15 |
| 124 | 1.03 | 1.19 | 3 | 4. | 2,250 | 17 |
| 146 | 1.02 | .... | 2 | 6. | 2,800 | 19 |

The above prices of attachments are for A1, A2, A3, A7, A11, C1, E1, E2, F2, G1, G6, H1, H2, K1, K2, M1, M3, R1, R3, S1, and S2, and as they are now made for the respective chains. Other attachments will be furnished at special prices.

The following additional sizes are carried in stock at factory: Nos. 36½, 44, 48, 50, 54, 76½, 115, 117.

**ADJUSTABLE BALL AND SOCKET DROP HANGERS
WITH CAPILLARY OILING BABBITTED BEARINGS**

SINGLE BRACE**B3540****DOUBLE BRACE****B3541**

Our Hanger, as illustrated above, is of a design that is much appreciated by millwrights and mechanics generally, due to our preservation of the true ball and socket principle, as well as the embodiment of the open side feature. After the upper and lower plungers are permanently adjusted, a jam set-screw holds the alignment perfectly firm. The shaft may be placed into position easily and quickly, without resorting to the use of hoists, lashings, etc., as are necessary where hangers open at the bottom or end.

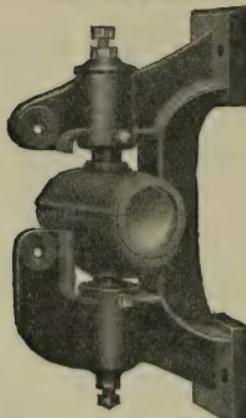
| Size of Shaft | Brace | DROP IN INCHES | | | | | | | | | |
|---|--------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 24 | 30 | 36 |
| $\frac{5}{8}$, $\frac{11}{16}$, 1 | Single | 4.50 | 4.65 | 4.85 | 5.10 | 5.20 | 5.60 | 6.05 | ..... | ..... | ..... |
| | Double | 4.80 | 4.95 | 5.15 | 5.40 | 5.50 | 5.90 | 6.35 | ..... | ..... | ..... |
| $1\frac{1}{8}$, $1\frac{1}{16}$, $1\frac{1}{4}$ | Single | 4.65 | 4.80 | 5.00 | 5.25 | 5.35 | 5.75 | 6.20 | ..... | ..... | ..... |
| | Double | 4.95 | 5.10 | 5.30 | 5.55 | 5.65 | 6.05 | 6.50 | ..... | ..... | ..... |
| $1\frac{7}{8}$ and $1\frac{1}{2}$ | Single | 5.35 | 5.50 | 5.70 | 5.95 | 6.05 | 5.45 | 6.90 | ..... | ..... | ..... |
| | Double | 5.65 | 5.90 | 6.10 | 6.35 | 6.45 | 6.85 | 7.30 | ..... | ..... | ..... |
| $1\frac{11}{16}$ " $1\frac{1}{4}$ | Single | 5.60 | 5.75 | 5.95 | 6.20 | 6.30 | 6.70 | 7.15 | ..... | ..... | ..... |
| | Double | 6.00 | 6.15 | 6.35 | 6.60 | 6.70 | 7.10 | 7.55 | ..... | ..... | ..... |
| $1\frac{15}{16}$ " 2 | Single | 8.25 | 8.75 | 8.90 | 9.20 | 9.65 | 9.70 | 10.20 | 11.05 | ..... | ..... |
| | Double | 8.75 | 9.25 | 9.40 | 9.70 | 10.15 | 10.20 | 10.70 | 11.55 | ..... | ..... |
| $2\frac{3}{16}$ " $2\frac{1}{4}$ | Single | 10.50 | 10.65 | 11.15 | 11.75 | 12.20 | 13.10 | 14.80 | 17.15 | ..... | ..... |
| | Double | 11.05 | 11.20 | 11.70 | 12.30 | 12.75 | 13.65 | 15.35 | 17.70 | ..... | ..... |
| $2\frac{7}{16}$ " $2\frac{1}{2}$ | Single | 11.10 | 11.25 | 11.75 | 12.35 | 12.80 | 13.70 | 15.40 | 17.75 | ..... | ..... |
| | Double | 11.65 | 11.80 | 12.30 | 12.90 | 13.35 | 14.25 | 15.95 | 18.30 | ..... | ..... |
| $2\frac{11}{16}$ " $2\frac{3}{4}$ | Single | 13.25 | 13.75 | 13.85 | 15.15 | 16.25 | 17.30 | 19.55 | 21.60 | 22.35 | ..... |
| | Double | 14.05 | 14.55 | 14.65 | 15.95 | 17.05 | 18.10 | 20.35 | 22.40 | 23.15 | ..... |
| $2\frac{11}{16}$ " 3 | Single | 15.90 | 16.50 | 16.60 | 17.90 | 19.00 | 20.05 | 22.30 | 24.35 | 25.10 | ..... |
| | Double | 16.70 | 17.30 | 17.40 | 18.70 | 19.80 | 20.85 | 23.10 | 25.15 | 25.90 | ..... |
| $3\frac{3}{16}$ " $3\frac{1}{4}$ | Single | 24.20 | 24.95 | 25.45 | 26.85 | 28.75 | 31.95 | 35.05 | 37.55 | ..... | ..... |
| | Double | 25.25 | 26.00 | 26.50 | 27.90 | 29.80 | 33.00 | 36.10 | 38.60 | ..... | ..... |
| $3\frac{7}{16}$ " $3\frac{1}{2}$ | Single | 26.55 | 27.30 | 27.80 | 29.20 | 31.10 | 34.30 | 37.40 | 39.90 | ..... | ..... |
| | Double | 27.60 | 28.35 | 28.85 | 30.25 | 32.15 | 35.35 | 38.45 | 40.95 | ..... | ..... |
| $3\frac{11}{16}$ " $3\frac{3}{4}$ | Single | 30.80 | 31.30 | 33.45 | 34.20 | 36.10 | 41.35 | 44.80 | 49.35 | ..... | ..... |
| | Double | 32.00 | 32.50 | 34.65 | 35.40 | 37.30 | 42.55 | 46.00 | 50.55 | ..... | ..... |
| $3\frac{15}{16}$ " 4 | Single | 32.55 | 33.05 | 35.20 | 35.95 | 37.85 | 43.10 | 46.55 | 51.10 | ..... | ..... |
| | Double | 33.75 | 34.25 | 36.40 | 37.15 | 39.05 | 44.30 | 47.75 | 52.30 | ..... | ..... |
| $4\frac{3}{16}$ " $4\frac{1}{4}$ | Single | ..... | ..... | 37.85 | 40.10 | 42.35 | 47.60 | 50.40 | 56.35 | ..... | ..... |
| | Double | ..... | ..... | 39.40 | 41.65 | 43.90 | 49.15 | 51.95 | 57.90 | ..... | ..... |
| $4\frac{7}{16}$ " $4\frac{1}{2}$ | Single | ..... | ..... | 40.50 | 42.75 | 45.00 | 50.25 | 53.05 | 59.00 | ..... | ..... |
| | Double | ..... | ..... | 42.05 | 44.30 | 46.55 | 51.80 | 54.60 | 60.55 | ..... | ..... |
| $4\frac{11}{16}$ " $4\frac{3}{4}$ | Single | ..... | ..... | 47.75 | 51.45 | 53.70 | 57.80 | 61.50 | 69.60 | ..... | ..... |
| | Double | ..... | ..... | 49.70 | 53.40 | 55.65 | 59.25 | 63.45 | 71.55 | ..... | ..... |
| $4\frac{15}{16}$ " 5 | Single | ..... | ..... | 52.85 | 56.55 | 58.80 | 62.40 | 66.60 | 74.70 | ..... | ..... |
| | Double | ..... | ..... | 54.80 | 58.50 | 60.75 | 64.35 | 68.55 | 76.65 | ..... | ..... |

Ring Oiling Bearings can be furnished on special order.

ADJUSTABLE BALL AND SOCKET POST HANGERS

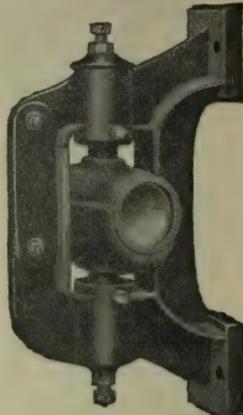
With Capillary Oiling Babbitted Bearings

SINGLE BRACE



B3545

DOUBLE BRACE



B3546

These Post Hangers take either our Capillary or Ring Oiling Bearings, which are interchangeable in both. They are heavy and substantial, have the true ball and socket movement, are carefully finished, and are in every respect superior appliances.

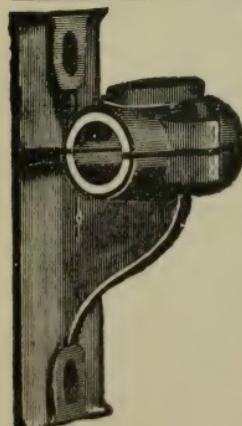
All bearings carefully **bored** to exact size after babbetting.

| SINGLE BRACE | | | | DOUBLE BRACE | | | |
|-------------------|-------|-------------------|-------|-------------------|-------|-------------------|-------|
| Size | Price | Size | Price | Size | Price | Size | Price |
| 1 $\frac{3}{16}$ | 5.60 | 3 $\frac{3}{16}$ | 26.25 | 1 $\frac{3}{16}$ | 5.95 | 3 $\frac{3}{16}$ | 27.30 |
| 1 $\frac{7}{16}$ | 5.95 | 3 $\frac{7}{16}$ | 28.60 | 1 $\frac{7}{16}$ | 6.30 | 3 $\frac{7}{16}$ | 29.65 |
| 1 $\frac{11}{16}$ | 6.20 | 3 $\frac{11}{16}$ | 32.85 | 1 $\frac{11}{16}$ | 6.55 | 3 $\frac{11}{16}$ | 34.05 |
| 1 $\frac{15}{16}$ | 6.55 | 3 $\frac{15}{16}$ | 34.60 | 1 $\frac{15}{16}$ | 9.05 | 3 $\frac{15}{16}$ | 35.80 |
| 2 $\frac{1}{16}$ | 11.20 | 4 $\frac{1}{16}$ | 38.00 | 2 $\frac{1}{16}$ | 11.75 | 4 $\frac{1}{16}$ | 39.55 |
| 2 $\frac{7}{16}$ | 11.80 | 4 $\frac{7}{16}$ | 40.65 | 2 $\frac{7}{16}$ | 12.35 | 4 $\frac{7}{16}$ | 42.20 |
| 2 $\frac{11}{16}$ | 14.80 | 4 $\frac{11}{16}$ | 51.75 | 2 $\frac{11}{16}$ | 15.60 | 4 $\frac{11}{16}$ | 53.70 |
| 2 $\frac{15}{16}$ | 17.55 | 4 $\frac{15}{16}$ | 56.85 | 2 $\frac{15}{16}$ | 18.35 | 4 $\frac{15}{16}$ | 58.80 |

Ring Oiling Bearings can be furnished on special order.

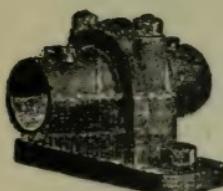
RIGID POST HANGERS OR BRACKET BOXES

Babbitted Bearings



B3548

| Size of Shaft | Price | Size of Shaft | Price |
|-------------------|-------|-------------------|-------|
| 1 $\frac{7}{16}$ | 3.80 | 3 $\frac{3}{16}$ | 11.60 |
| 1 $\frac{11}{16}$ | 4.10 | 3 $\frac{7}{16}$ | 15.75 |
| 1 $\frac{15}{16}$ | 5.20 | 3 $\frac{11}{16}$ | 20.00 |
| 2 $\frac{1}{16}$ | 6.25 | 3 $\frac{15}{16}$ | 25.00 |
| 2 $\frac{7}{16}$ | 7.20 | 4 $\frac{1}{16}$ | 29.00 |
| 2 $\frac{11}{16}$ | 8.60 | 4 $\frac{7}{16}$ | 34.00 |
| 2 $\frac{15}{16}$ | 10.25 | 4 $\frac{11}{16}$ | 40.00 |

BALL AND SOCKET PILLOW BLOCKS

B3550

| CAPILLARY OILING | | | | RING OILING | | | |
|-------------------|-------|------------------|-------|-------------------|-------|-------------------|-------|
| Size of Shaft | Price | Size of Shaft | Price | Size of Shaft | Price | Size of Shaft | Price |
| 1 $\frac{3}{16}$ | 4.50 | 3 $\frac{3}{16}$ | 20.50 | 1 $\frac{7}{16}$ | 5.00 | 3 $\frac{7}{16}$ | 23.00 |
| 1 $\frac{1}{2}$ | 4.75 | 3 $\frac{1}{16}$ | 22.50 | 1 $\frac{1}{16}$ | 5.25 | 3 $\frac{1}{16}$ | 29.00 |
| 1 $\frac{11}{16}$ | 5.00 | 3 $\frac{1}{16}$ | 28.00 | 1 $\frac{1}{16}$ | 7.75 | 3 $\frac{1}{16}$ | 32.00 |
| 1 $\frac{13}{16}$ | 7.50 | 3 $\frac{1}{16}$ | 31.00 | 2 $\frac{3}{16}$ | 10.75 | 4 $\frac{1}{16}$ | 46.00 |
| 2 $\frac{1}{16}$ | 10.50 | 4 $\frac{1}{16}$ | 45.00 | 2 $\frac{7}{16}$ | 11.75 | 4 $\frac{7}{16}$ | 49.00 |
| 2 $\frac{7}{16}$ | 11.50 | 4 $\frac{7}{16}$ | 48.00 | 2 $\frac{11}{16}$ | 14.50 | 4 $\frac{11}{16}$ | 53.00 |
| 2 $\frac{13}{16}$ | 14.00 | 4 $\frac{1}{16}$ | 52.00 | 2 $\frac{15}{16}$ | 15.50 | 4 $\frac{15}{16}$ | 56.00 |
| 2 $\frac{15}{16}$ | 15.00 | 4 $\frac{1}{16}$ | 55.00 | 3 $\frac{3}{16}$ | 21.00 | | |

RIGID PILLOW BLOCKS
With Standard Babbitted Bearings

B3551

| Size | Price | Size | Price | Size | Price | Size | Price |
|-------------------|-------|-------------------|-------|-------------------|-------|-------------------|-------|
| 1 $\frac{1}{16}$ | 1.30 | 2 $\frac{1}{16}$ | 4.00 | 3 $\frac{7}{16}$ | 11.00 | 5 $\frac{7}{16}$ | 33.60 |
| 1 $\frac{1}{16}$ | 1.60 | 2 $\frac{7}{16}$ | 4.90 | 3 $\frac{11}{16}$ | 13.30 | 5 $\frac{1}{16}$ | 48.40 |
| 1 $\frac{7}{16}$ | 2.10 | 2 $\frac{11}{16}$ | 6.10 | 3 $\frac{1}{16}$ | 16.60 | 6 $\frac{1}{16}$ | 56.50 |
| 1 $\frac{11}{16}$ | 2.65 | 2 $\frac{15}{16}$ | 7.80 | 4 $\frac{7}{16}$ | 21.80 | 6 $\frac{15}{16}$ | 63.80 |
| 1 $\frac{13}{16}$ | 3.40 | 3 $\frac{3}{16}$ | 9.40 | 4 $\frac{1}{16}$ | 26.40 | 7 $\frac{1}{16}$ | 80.00 |

SET COLLARS
PLAIN COLLAR

B3553

***PRICE LIST PLAIN COLLARS**

| Size | Each | Size | Each | Size | Each | Size | Each |
|-------------------|------|-------------------|------|-------------------|------|-------------------|------|
| 1 $\frac{1}{16}$ | .62 | 1 $\frac{1}{16}$ | 1.30 | 2 $\frac{3}{16}$ | 2.25 | 3 $\frac{11}{16}$ | 3.30 |
| 1 | .65 | 1 $\frac{1}{16}$ | 1.35 | 2 $\frac{7}{16}$ | 2.32 | 3 $\frac{3}{4}$ | 3.37 |
| 1 $\frac{1}{16}$ | .75 | 1 $\frac{1}{16}$ | 1.40 | 2 $\frac{15}{16}$ | 2.40 | 3 $\frac{1}{16}$ | 3.45 |
| 1 $\frac{3}{16}$ | .80 | 2 | 1.45 | 3 | 2.48 | 3 $\frac{1}{16}$ | 3.52 |
| 1 $\frac{1}{4}$ | .85 | 2 $\frac{1}{4}$ | 1.55 | 3 $\frac{1}{16}$ | 2.63 | 3 $\frac{1}{16}$ | 3.60 |
| 1 $\frac{5}{16}$ | .90 | 2 $\frac{3}{16}$ | 1.60 | 3 $\frac{3}{16}$ | 2.70 | 4 | 3.75 |
| 1 $\frac{1}{16}$ | .95 | 2 $\frac{1}{4}$ | 1.65 | 3 $\frac{1}{4}$ | 2.77 | 4 $\frac{1}{16}$ | 4.00 |
| 1 $\frac{7}{16}$ | 1.00 | 2 $\frac{3}{16}$ | 1.75 | 3 $\frac{1}{16}$ | 2.92 | 4 $\frac{3}{16}$ | 4.15 |
| 1 $\frac{1}{2}$ | 1.05 | 2 $\frac{7}{16}$ | 1.80 | 3 $\frac{7}{16}$ | 3.00 | 4 $\frac{1}{4}$ | 4.28 |
| 1 $\frac{9}{16}$ | 1.10 | 2 $\frac{1}{2}$ | 1.88 | 3 $\frac{1}{2}$ | 3.08 | 4 $\frac{5}{16}$ | 4.42 |
| 1 $\frac{13}{16}$ | 1.15 | 2 $\frac{5}{16}$ | 2.03 | 3 $\frac{1}{16}$ | 3.14 | 4 $\frac{3}{8}$ | 4.56 |
| 1 $\frac{15}{16}$ | 1.20 | 2 $\frac{11}{16}$ | 2.10 | 3 $\frac{3}{8}$ | 3.22 | 4 $\frac{7}{16}$ | 4.70 |
| 1 $\frac{1}{4}$ | 1.25 | 2 $\frac{1}{4}$ | 2.17 | | | | |

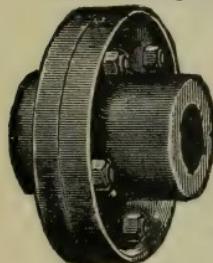
* For prices of Split Collars, add 50 per cent to list price.



B3555

| Size Shaft | $1\frac{3}{16}$ | $1\frac{7}{16}$ | $1\frac{11}{16}$ | $1\frac{15}{16}$ | $2\frac{3}{16}$ | $2\frac{7}{16}$ | $2\frac{11}{16}$ | $2\frac{15}{16}$ | $3\frac{3}{16}$ | $3\frac{7}{16}$ | $3\frac{11}{16}$ | $3\frac{15}{16}$ |
|----------------|-----------------|-----------------|------------------|------------------|-----------------|-----------------|------------------|------------------|-----------------|-----------------|------------------|------------------|
| Price Complete | 4.75 | 5.50 | 6.25 | 8.00 | 9.00 | 10.75 | 13.00 | 16.00 | 32.50 | 39.25 | 45.25 | 51.25 |

For reducing Couplings, add 20 per cent. to the list prices of larger bores.



B3557

FLANGE OR PLATE COUPLINGS

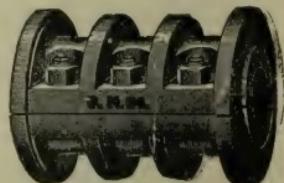
Our Flange Couplings are of a heavy design, and are accurately and carefully finished. When ordered fitted, each half is forced on the shaft under pressure, keyed and then faced off in a lathe, thus insuring a true running line.

| Size of Shaft | Price Per Pair Not Fitted | Price For Fitting. | Size of Shaft | Price Per Pair Not Fitted | Price For Fitting | Size of Shaft | Price Per Pair Not Fitted | Price For Fitting |
|------------------|---------------------------|--------------------|------------------|---------------------------|-------------------|------------------|---------------------------|-------------------|
| $1\frac{7}{16}$ | 8.25 | 2.50 | $2\frac{11}{16}$ | 15.50 | 3.25 | $3\frac{15}{16}$ | 34.00 | 6.00 |
| $1\frac{11}{16}$ | 8.75 | 2.60 | $2\frac{15}{16}$ | 18.75 | 3.50 | $4\frac{7}{16}$ | 43.50 | 12.00 |
| $1\frac{15}{16}$ | 9.25 | 2.75 | $3\frac{3}{16}$ | 22.00 | 4.00 | $4\frac{15}{16}$ | 55.00 | 18.00 |
| $2\frac{3}{16}$ | 10.75 | 2.85 | $3\frac{7}{16}$ | 25.75 | 4.50 | $5\frac{7}{16}$ | 67.50 | 21.00 |
| $2\frac{7}{16}$ | 12.75 | 3.00 | $3\frac{11}{16}$ | 29.50 | 5.00 | $5\frac{15}{16}$ | 82.00 | 22.00 |

For the price of Reducing Couplings, add 10 per cent. to the list price of the larger half.

RIBBED COMPRESSION COUPLINGS

This is a satisfactory low-priced coupling of standard design and dimensions. All couplings $1\frac{3}{16}$ inches and over are keyseated and furnished complete with key.

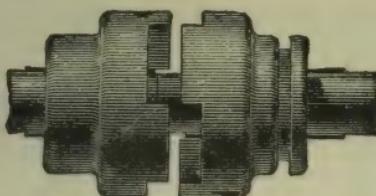


B3560

| Size of Shaft | Price Not Fitted | Price Fitted | Size of Shaft | Price Not Fitted | Price Fitted | Size of Shaft | Price Not Fitted | Price Fitted |
|------------------|------------------|--------------|------------------|------------------|--------------|------------------|------------------|--------------|
| $1\frac{3}{16}$ | 3.10 | 4.25 | $2\frac{3}{16}$ | 9.25 | 11.50 | $3\frac{7}{16}$ | 20.50 | 24.50 |
| $1\frac{7}{16}$ | 3.70 | 4.90 | $2\frac{7}{16}$ | 10.50 | 12.75 | $3\frac{11}{16}$ | 25.00 | 29.50 |
| $1\frac{11}{16}$ | 4.35 | 5.85 | $2\frac{11}{16}$ | 11.20 | 13.70 | $3\frac{15}{16}$ | 28.50 | 32.50 |
| $1\frac{15}{16}$ | 6.50 | 8.00 | $2\frac{15}{16}$ | 13.25 | 16.00 | | | |
| $2\frac{3}{16}$ | 7.60 | 9.10 | $3\frac{3}{16}$ | 16.75 | 20.00 | | | |

For Reducing Couplings, add 10 per cent. to the list price of the larger bore.

JAW CLUTCH COUPLINGS



B3570

| Diameter of shaft.....inches | $1\frac{3}{8}$ | $1\frac{7}{8}$ | $1\frac{11}{16}$ | $1\frac{15}{16}$ | $2\frac{3}{16}$ | $2\frac{7}{8}$ |
|------------------------------|----------------|----------------|------------------|------------------|-----------------|----------------|
| Not fitted.....pair | 7.00 | 8.00 | 8.50 | 9.00 | 11.25 | 14.25 |
| Fitted on shaft....." | 10.00 | 12.00 | 12.75 | 13.50 | 15.75 | 18.75 |
| Lever and Clutch Band..... | 4.00 | 4.50 | 5.00 | 5.25 | 5.50 | 6.00 |

| Diameter of shaft.....inches | $2\frac{1}{8}$ | $2\frac{15}{16}$ | $3\frac{7}{16}$ | $3\frac{15}{16}$ | $4\frac{7}{16}$ | $4\frac{15}{16}$ |
|------------------------------|----------------|------------------|-----------------|------------------|-----------------|------------------|
| Not fitted.....pair | 18.50 | 22.75 | 30.00 | 39.00 | 52.00 | 70.00 |
| Fitted on shaft....." | 23.25 | 27.75 | 37.50 | 48.75 | 65.50 | 87.00 |
| Lever and Clutch Band..... | 6.50 | 7.00 | 7.50 | 8.00 | 9.00 | 11.00 |

The Jaws of Clutch Couplings are planed to prevent back lash. We can also furnish either Right or Left Hand Spiral Jaw Couplings at the same prices as the Square Jaw Couplings.

FRICITION CLUTCHES WITH EXTENDED SLEEVES

To arrive at the price of a Friction Clutch Pulley complete, add net price of either Cast Iron, or Wood Split Pulley to that of the Extended Sleeve Clutch, allowing about \$1.75 net for probable charge for boring hubs extra large to take Extended Sleeve. Always be particular in ordering to state whether Iron Center Wood Pulleys, all Wood Pulleys, or Cast Iron Pulleys are desired.

Keyseating Sleeves for Pulleys, 50c. net extra. Clutches running over 200 revolutions per minute, and to obtain the best results even though they run at a lower speed, should have either babbitted or bronze bushings.

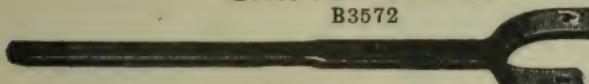
| Size No. | H. P. at 100 Revolutions | Largest Shaft Inches | Diameter Over all Inches | Length of Bearing Inches | Length of Sleeve Inches | Space on Shaft Inches | Price, Solid | Price, Split |
|----------|--------------------------|----------------------|--------------------------|--------------------------|-------------------------|-----------------------|--------------|--------------|
| 1 | $3\frac{1}{2}$ | $2\frac{1}{2}$ | $8\frac{1}{2}$ | 8 | 5 | $18\frac{1}{2}$ | 28.00 | 37.50 |
| 2 | $7\frac{1}{2}$ | 3 | $10\frac{3}{4}$ | $9\frac{1}{2}$ | 6 | $20\frac{1}{4}$ | 34.00 | 45.00 |
| 3 | 13 | $3\frac{1}{2}$ | $12\frac{1}{2}$ | 11 | 7 | 22 | 40.00 | 53.00 |
| 4 | 19 | $4\frac{1}{2}$ | $14\frac{1}{2}$ | 12 | 8 | 26 | 54.00 | 72.00 |
| 5 | 27 | 5 | $16\frac{1}{2}$ | 15 | 10 | 29 | 75.00 | 100.00 |
| 6 | 36 | $6\frac{1}{2}$ | $18\frac{1}{4}$ | 16 | 11 | 32 | 95.00 | 125.00 |
| 7 | 55 | $7\frac{1}{2}$ | $21\frac{1}{4}$ | 17 | 12 | $34\frac{1}{2}$ | 145.00 | 195.00 |
| 8 | 70 | 12 | 26 | 18 | 13 | $37\frac{1}{2}$ | 180.00 | 240.00 |
| 9 | 100 | 14 | 37 | 20 | 15 | $39\frac{1}{2}$ | 250.00 | 330.00 |

Price includes Collar and Shifter Fork.

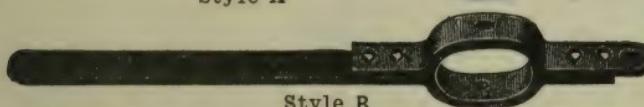
SHIFTER FORKS

B3572

Style A



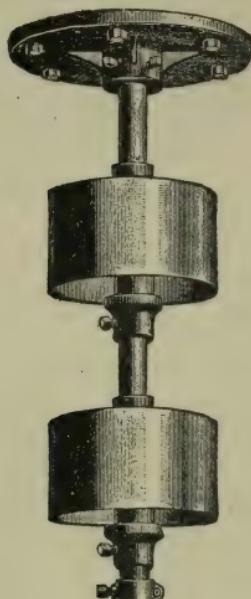
Style B



Always specify which style of Shifter Lever is desired. Unless otherwise specified, style "A" will be furnished.

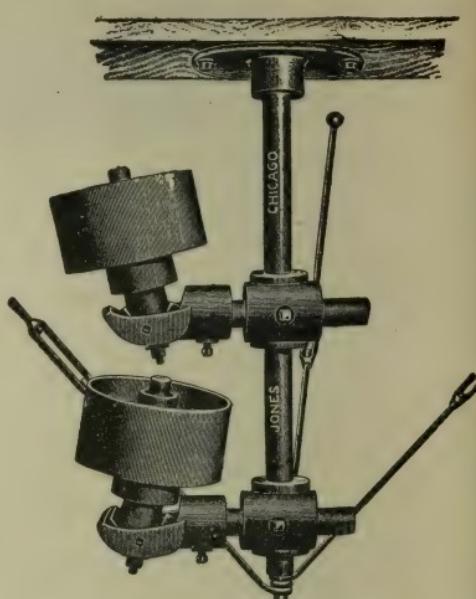
See price list at top of page

STATIONARY MULE PULLEY STANDS



B3575

ADJUSTABLE MULE PULLEY STANDS



B3576

Complete with Ceiling Plate, Cup Collars, Guy Rods, and Two Iron Pulleys.

Price List

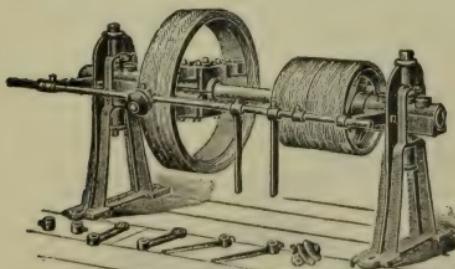
| | |
|------------------------------------|-------|
| For 2 inch Belt, 10 x 3 inches.... | 22.50 |
| " 3 " " 10 x 4 " | 25.00 |
| " 4 " " 12 x 5 " | 30.00 |
| " 5 " " 12 x 6 " | 32.00 |
| " 6 " " 16 x 7 " | 37.50 |
| " 7 " " 16 x 8 " | 40.00 |
| " 8 " " 24 x 10 " | 45.00 |
| " 10 " " 24 x 12 " | 55.00 |
| " 12 " " 30 x 14 " | 65.00 |

For use where two shafts are not on the same plane.

Price includes One Shaft, Two Pulleys, Two Adjustable Arms, Top Plate, and Guy Rods.

Price List

| | |
|-----------------------------------|--------|
| For 4 inch Belt, 12 x 5 inches... | 60.00 |
| " 5 " " 12 x 6 " | 62.00 |
| " 6 " " 12 x 7 " | 75.00 |
| " 7 " " 16 x 8 " | 78.00 |
| " 8 " " 16 x 9 " | 85.00 |
| " 10 " " 24 x 12 " | 112.00 |
| " 12 " " 30 x 14 " | 160.00 |



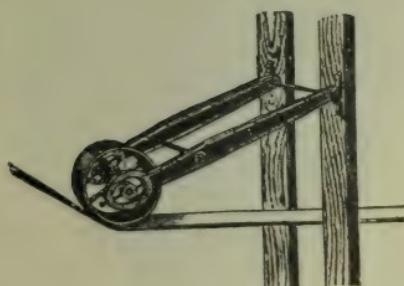
COUNTER SHAFT FIXTURES

B3577

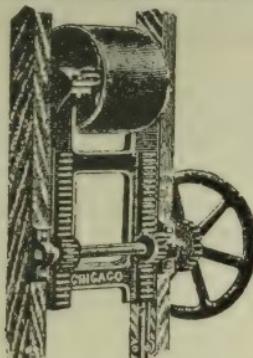
Prices include Rod 4 feet long. Extra Length Rods 45 cents per foot.

Price does not include Pulley, Shaft, or Hangers.

| Length of Arm and Fingers.....inches | 8 | 10 | 12 |
|--------------------------------------|------|------|------|
| Price, per Arm with Bolt.....each | .95 | 1.10 | 1.30 |
| " Fixtures without Arms....." | 2.40 | 2.80 | 3.10 |
| " Complete Set of Attachments...." | 4.25 | 4.90 | 5.50 |

BELT TIGHTENERS**SWINGING BELT TIGHTENER**

B3580

**BELT TIGHTENER
FOR WOODEN FRAMES**

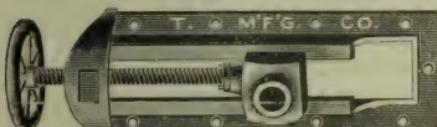
B3581

| Motion | Size of Pulley | Price |
|--------|----------------|-------|
| 3 feet | 12 x 8 | 30.00 |
| 3 " | 12 x 10 | 35.00 |
| 4 " | 20 x 14 | 40.00 |
| 4 " | 24 x 16 | 45.00 |
| 5 " | 28 x 20 | 50.00 |
| 5 " | 30 x 26 | 55.00 |

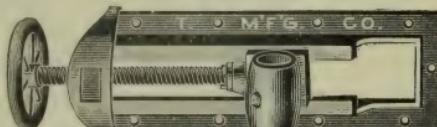
| No. | Length of Adjustment | Size of Pulley Diam. Face | Diam. of Shaft | Price With Iron Side Frames | Price Without Iron Frame |
|-----|----------------------|---------------------------|------------------|-----------------------------|--------------------------|
| 00 | 1 $\frac{1}{2}$ ft. | 12 x 9 | 1 $\frac{1}{16}$ | 37.50 | 30.00 |
| 0 | 1 $\frac{1}{8}$ " | 18 x 12 | 1 $\frac{1}{16}$ | 50.00 | 40.00 |
| 1 | 2 " | 24 x 14 | 1 $\frac{1}{8}$ | 70.00 | 56.00 |
| 2 | 3 $\frac{1}{2}$ " | 28 x 20 | 2 $\frac{7}{16}$ | 100.00 | 82.00 |
| 3 | 4 " | 30 x 26 | 2 $\frac{1}{8}$ | 160.00 | 120.00 |
| 4 | 5 " | 42 x 38 | 2 $\frac{1}{8}$ | 300.00 | 250.00 |

TAKE-UPS

For use where it is necessary to take up slack in belts, as in elevators. Made to pull and push.

A STYLE

B3583

B STYLE

B3584

In ordering give diameter of shaft.

| No. of Frame | Diameter of Shaft | Price, Each, "A" or "B" | No. of Frame | Diameter of Shaft | Price, Each, "A" or "B" | No. of Frame | Diameter of Shaft | Price, Each, "A" or "B" |
|--------------|-------------------|-------------------------|--------------|-------------------|-------------------------|--------------|-------------------|-------------------------|
| 4 | 1 $\frac{1}{8}$ | 1.75 | 7 | 1 $\frac{1}{16}$ | 4.00 | 20 | 2 $\frac{1}{16}$ | 11.00 |
| 4 | 1 $\frac{1}{16}$ | 1.90 | 9 | 1 $\frac{1}{8}$ | 4.75 | 20 | 2 $\frac{1}{16}$ | 13.50 |
| 4 | 1 $\frac{1}{16}$ | 2.00 | 9 | 2 $\frac{3}{16}$ | 5.00 | 24 | 3 $\frac{1}{16}$ | 15.00 |
| 5 | 1 $\frac{3}{16}$ | 2.55 | 12 | 2 $\frac{5}{16}$ | 6.25 | 36 | 3 $\frac{1}{16}$ | 20.00 |
| 5 | 1 $\frac{1}{16}$ | 2.70 | 12 | 2 $\frac{7}{16}$ | 6.75 | 48 | 3 $\frac{1}{16}$ | 35.00 |
| 7 | 1 $\frac{1}{16}$ | 3.25 | 20 | 2 $\frac{9}{16}$ | 9.50 | 60 | 3 $\frac{1}{16}$ | 40.00 |
| 7 | 1 $\frac{9}{16}$ | 3.50 | 20 | 2 $\frac{11}{16}$ | 10.00 | 72 | 4 $\frac{7}{16}$ | 50.00 |

The number of frame indicates length of movement in inches.

For extra large wide belts and chain conveyors we have special Take-Up Boxes. Prices on application.

FINISHED SHAFTING

Cold Rolled and Turned

B3590

Shafting is manufactured to the U. S. Standard Gauge, is polished, absolutely round, straight, and true to size. Cut in lengths from 1 foot to 24 feet inclusively.

Special net prices on shafting $4\frac{1}{8}$ inches and larger.

Owing to the inconvenience in handling, and the liability to injury in transit, we recommend the use, as far as practical, of length of shafting 20 feet and under, also that shafting be boxed for shipment. Charge for boxing is at actual cost, and shafting not boxed is shipped at customer's risk of damage in transit.

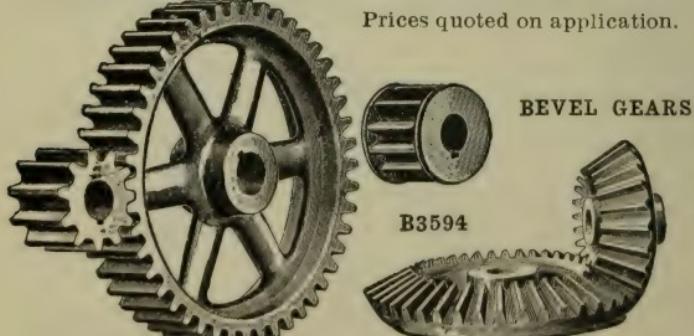
STANDARD PRICE LIST OF FINISHED SHAFTING

| Size | Price per Lb. | Weight per Ft. | Price per Ft. | Size | Price per Lb. | Weight per Ft. | Price per Ft. | Size | Price per Lb. | Weight per Ft. | Price per Ft. |
|------------------|-------------------|----------------|---------------|------------------|---------------|----------------|---------------|------------------|-------------------|----------------|---------------|
| $\frac{1}{4}$ | .10 | .167 | .02 | $1\frac{1}{16}$ | .05 | 7.61 | .39 | $3\frac{1}{8}$ | .05 $\frac{1}{4}$ | 26.09 | 1.37 |
| $\frac{3}{16}$ | .08 $\frac{1}{2}$ | .260 | .02 | $1\frac{3}{16}$ | .05 | 8.18 | .41 | $3\frac{3}{16}$ | .05 $\frac{1}{4}$ | 27.16 | 1.43 |
| $\frac{5}{32}$ | .07 | .375 | .03 | $1\frac{13}{16}$ | .05 | 8.78 | .44 | $3\frac{1}{4}$ | .05 $\frac{1}{4}$ | 28.22 | 1.49 |
| $\frac{7}{32}$ | .07 | .511 | .04 | $1\frac{7}{16}$ | .05 | 9.39 | .47 | $3\frac{3}{8}$ | .05 $\frac{1}{4}$ | 30.43 | 1.60 |
| $\frac{9}{32}$ | .07 | .667 | .05 | $1\frac{15}{16}$ | .05 | 10.03 | .51 | $3\frac{7}{16}$ | .05 $\frac{1}{4}$ | 31.58 | 1.66 |
| $\frac{1}{2}$ | .06 | .845 | .06 | 2 | .05 | 10.69 | .54 | $3\frac{1}{2}$ | .05 $\frac{1}{2}$ | 32.73 | 1.81 |
| $\frac{13}{32}$ | .06 | 1.05 | .07 | $2\frac{1}{16}$ | .05 | 11.35 | .57 | $3\frac{5}{8}$ | .05 $\frac{1}{2}$ | 35.20 | 1.94 |
| $\frac{15}{32}$ | .06 | 1.26 | .08 | $2\frac{7}{16}$ | .05 | 12.07 | .61 | $3\frac{11}{16}$ | .05 $\frac{1}{2}$ | 36.40 | 2.01 |
| $\frac{17}{32}$ | .06 | 1.50 | .09 | $2\frac{3}{8}$ | .05 | 12.80 | .65 | $3\frac{3}{4}$ | .05 $\frac{1}{2}$ | 37.57 | 2.07 |
| $\frac{19}{32}$ | .05 $\frac{1}{2}$ | 2.05 | .12 | $2\frac{1}{4}$ | .05 | 13.52 | .68 | $3\frac{5}{8}$ | .05 $\frac{1}{2}$ | 39.95 | 2.20 |
| $\frac{21}{32}$ | .05 $\frac{1}{2}$ | 2.35 | .13 | $2\frac{15}{16}$ | .05 | 14.35 | .72 | $3\frac{15}{16}$ | .05 $\frac{1}{2}$ | 41.25 | 2.27 |
| 1 | .05 $\frac{1}{2}$ | 2.68 | .15 | $2\frac{3}{8}$ | .05 | 15.07 | .76 | 4 | .06 | 42.75 | 2.57 |
| $1\frac{1}{16}$ | .05 $\frac{1}{2}$ | 3.02 | .17 | $2\frac{7}{16}$ | .05 | 15.89 | .80 | $4\frac{3}{16}$ | .06 | 47.40 | 2.85 |
| $1\frac{3}{16}$ | .05 $\frac{1}{2}$ | 3.38 | .19 | $2\frac{9}{16}$ | .05 | 16.70 | .84 | $4\frac{1}{4}$ | .06 | 48.26 | 2.90 |
| $1\frac{5}{16}$ | .05 $\frac{1}{2}$ | 3.77 | .21 | $2\frac{9}{16}$ | .05 | 17.55 | .88 | $4\frac{3}{8}$ | .06 | 51.80 | 3.11 |
| $1\frac{7}{16}$ | .05 $\frac{1}{2}$ | 4.17 | .23 | $2\frac{9}{8}$ | .05 | 18.41 | .93 | $4\frac{7}{16}$ | .06 | 52.62 | 3.16 |
| $1\frac{9}{16}$ | .05 $\frac{1}{2}$ | 4.61 | .26 | $2\frac{11}{16}$ | .05 | 19.31 | .97 | $4\frac{1}{2}$ | .06 $\frac{1}{2}$ | 54.11 | 3.52 |
| $1\frac{11}{16}$ | .05 $\frac{1}{2}$ | 5.05 | .28 | $2\frac{3}{4}$ | .05 | 20.21 | 1.02 | $4\frac{11}{16}$ | .06 $\frac{1}{2}$ | 58.66 | 3.82 |
| $1\frac{13}{16}$ | .05 $\frac{1}{2}$ | 5.52 | .31 | $2\frac{13}{16}$ | .05 | 21.15 | 1.06 | $4\frac{3}{4}$ | .06 $\frac{1}{2}$ | 60.88 | 3.96 |
| $1\frac{15}{16}$ | .05 | 6.01 | .31 | $2\frac{7}{8}$ | .05 | 22.09 | 1.11 | $4\frac{15}{16}$ | .06 $\frac{1}{2}$ | 65.50 | 4.26 |
| $1\frac{17}{16}$ | .05 | 6.52 | .33 | $2\frac{15}{16}$ | .05 | 23.06 | 1.16 | 5 | .07 | 67.45 | 4.72 |
| $1\frac{19}{16}$ | .05 | 7.06 | .36 | 3 | .05 | 24.05 | 1.21 | | | | |

The above prices are for shafts up to 24 feet long. Extra for cutting other than 24 feet.

**FLAT AND SQUARE SHAFTING
AND FLEXIBLE SHAFTING****SPUR GEARS**

Prices quoted on application.

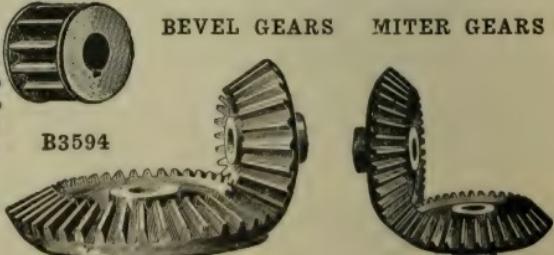


B3592

B3593

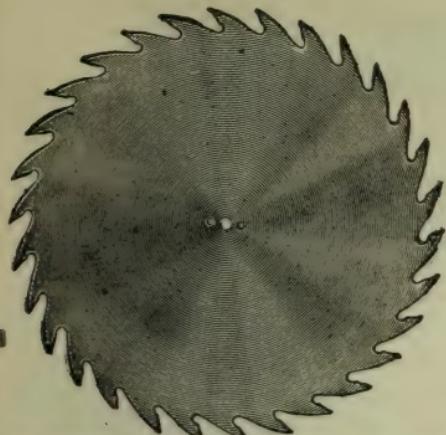
B3594

B3596

BEVEL GEARS**MITER GEARS**

B3597

Sizes and prices furnished on application.



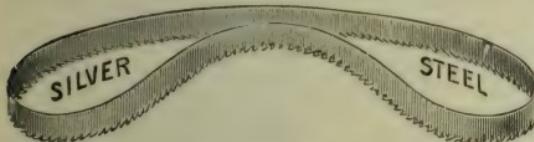
SOLID TOOTH CIRCULAR SAWS

B3600

When ordering state diameter and gauge, right or left hand, ripping or cross-cutting, and size of mandrel.

No extra charge for saws one gauge thicker than list. Circular saws beveled one gauge without extra charge up to 38 inches; 40 inches and larger beveled two gauges without extra charge. Circular saws 48 inches and larger, if made thinner than 10 gauge, are not warranted. Add 10 per cent to list for each gauge thinner than 10 gauge.

| Diameter, Inches | Hole Inch | Thickness, Gauge | Price, Each | Ea. Gauge Heavier Additional | Diameter, Inches | Hole Inch | Thickness, Gauge | Price, Each | Ea. Gauge Heavier Additional | Diameter, Inches | Hole Inch | Thickness, Gauge | Price, Each | Ea. Gauge Heavier Additional |
|---------------------|--------------|---------------------|----------------|------------------------------------|---------------------|--------------|---------------------|----------------|------------------------------------|---------------------|--------------|---------------------|----------------|------------------------------------|
| 4 | 19 | .10 | .03 | | 18 | 13 | .50 | .30 | | 40 | 20 | .00 | 36.00 | 2.00 |
| 5 | 19 | .04 | .03 | | 19 | 13 | .00 | .35 | | 42 | 20 | .00 | 42.00 | 2.50 |
| 6 | 18 | .05 | .04 | | 20 | 13 | .00 | .45 | | 44 | 20 | .00 | 50.00 | 3.00 |
| 7 | 18 | .06 | .05 | | 22 | 13 | .00 | .55 | | 46 | 20 | .00 | 60.00 | 3.50 |
| 8 | 18 | .08 | .06 | | 24 | 13 | .00 | .65 | | 48 | 20 | .00 | 70.00 | 4.00 |
| 9 | 18 | .10 | .08 | | 26 | 13 | .00 | .70 | | 50 | 20 | .00 | 80.00 | 4.50 |
| 10 | 16 | .12 | .10 | | 28 | 13 | .00 | .80 | | 52 | 20 | .00 | 90.00 | 5.00 |
| 11 | 16 | .14 | .12 | | 30 | 13 | .00 | .90 | | 54 | 20 | .00 | 100.00 | 6.00 |
| 12 | 16 | .14 | .14 | | 32 | 13 | .00 | 1.00 | | 56 | 20 | .00 | 115.00 | 7.00 |
| 13 | 15 | .17 | .17 | | 34 | 13 | .00 | 1.20 | | 58 | 20 | .00 | 130.00 | 8.00 |
| 14 | 15 | .21 | .21 | | 36 | 13 | .00 | 1.40 | | 60 | 20 | .00 | 145.00 | 9.00 |
| 16 | 14 | .25 | .25 | | 38 | 13 | .00 | 1.75 | | 6 | 18 | .00 | | |



NARROW BAND SAWS FOR LIGHT AND SCROLL SAWING

B3602

Not Joined, Filed, or Set

| Width | Standard Gauge | Standard Teeth | Per Foot | Width | Standard Gauge | Standard Teeth | Per Foot | Width | Standard Gauge | Standard Teeth | Per Foot | |
|---------------|-------------------|-------------------|----------|-------|-------------------|-------------------|-----------------------|-------|-------------------|-------------------|-----------------------|-----|
| $\frac{1}{8}$ | 22 | 8 | Points | .07 | $\frac{5}{8}$ | 21 | $4\frac{1}{2}$ Points | .13 | $1\frac{1}{4}$ | 20 | $3\frac{1}{2}$ Points | .23 |
| $\frac{1}{8}$ | 22 | 7 | " | .08 | $\frac{3}{4}$ | 21 | 4 | .15 | $1\frac{3}{8}$ | 20 | 3 " | .26 |
| $\frac{1}{4}$ | 22 | 6 | " | .09 | $\frac{7}{8}$ | 21 | 4 | .17 | $1\frac{1}{2}$ | 20 | 3 " | .29 |
| $\frac{3}{8}$ | 21 | 5 $\frac{1}{2}$ | " | .10 | 1 | 20 | $3\frac{1}{2}$ | .19 | $1\frac{1}{4}$ | 20 | 3 " | .32 |
| $\frac{1}{2}$ | 21 | 5 | " | .11 | $1\frac{1}{8}$ | 20 | $3\frac{1}{2}$ | .21 | | | | |

Narrow band saws with beveled backs, advance list 50 per cent for first gauge, and 10 per cent for each additional gauge.

For bands with knife edge, add 10 cents per foot to list.

Filing and setting, 4 cents per foot extra.

Brazing extra: $\frac{1}{4}$ to $\frac{1}{2}$ in., 40c; $\frac{3}{8}$ to $\frac{5}{8}$ in., 50c; 1 to $1\frac{1}{4}$ in., 60c; $1\frac{1}{2}$ to $1\frac{1}{2}$ in., 80c.

RUBBER BAND SAW TIRES

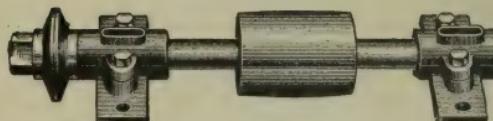
Per Pound, \$2.00

SILVER SOLDER

Per Ounce, \$2.00



End
Pulley
B3605



Centre
Pulley
B3606

CIRCULAR SAW MANDRELS

| Number | Diameter of Pulley | Face of Pulley | Diameter of Flange | Weight Lbs. | Length of Shaft | Diameter of Shaft | Size of Hole in Saw | Price Mandrel Complete |
|--------|--------------------|----------------|--------------------|-------------|-----------------|-------------------|---------------------|------------------------|
| 1 | 2½ in. | 3½ in. | 2½ in. | 18½ | 16 in. | 1 1/6 in. | 1 in. | 6.00 |
| 2 | 3 " | 4 " | 3 " | 22½ | 19 " | 1 3/8 in. | 1 1/8 " | 7.00 |
| 3 | 3½ " | 4½ " | 3½ " | 32 | 21 " | 1 5/8 in. | 1 1/4 " | 8.00 |
| 4 | 4 " | 5 " | 4 " | 38 | 24 " | 1 7/8 in. | 1 5/8 " | 9.00 |
| 5 | 4½ " | 5½ " | 4½ " | 44½ | 26 " | 1 1/6 in. | 1 5/8 " | 10.00 |
| 6 | 5 " | 6 " | 5 " | 46 | 28 " | 1 1/8 in. | 1 3/8 " | 11.00 |
| 7 | 5½ " | 6½ " | 5½ " | 49 | 30 " | 1 7/8 in. | 1 3/8 " | 12.00 |
| 8 | 6 " | 7 " | 6 " | 59 | 32 " | 1 1/6 in. | 1 1/2 " | 15.00 |
| 9 | 7 " | 8 " | 6 " | 75 | 37 " | 1 1/8 in. | 1 1/2 " | 18.00 |
| 10 | 8 " | 8 " | 6 " | 80 | 41 " | 1 1/6 in. | 1 5/8 " | 20.00 |
| 11 | 9 " | 10 " | 6 " | 90 | 48 " | 2 3/16 in. | 2 " | 25.00 |

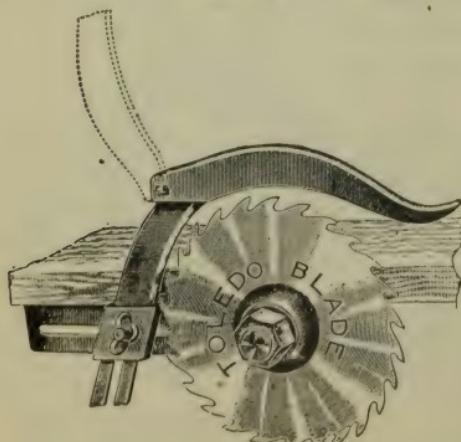
When ordering Saw Mandrels, send sketch and give distance from saw to end of mandrel, if the pulley is between the bearings. If the pulley is on the end of mandrel, give distance from saw to inside edge of pulley. Also whether the pulley is on the right or left hand side of mandrel when the saw is running towards you.

Mandrels are made with pulley on right hand side with left-hand thread unless otherwise ordered.

DOUBLE END MANDRELS

We furnish eleven sizes of Double End Mandrels Nos. 1 to 11. We use the same size pulley, flange, shaft and hole in saw as the list above.

Distance from saw to saw is the same as the length of shaft in list above. Add 40 per cent to list price above for Double End Mandrels. Any size or length mandrel wanted can be made to order.



RELIABLE SAW GUARDS

B3610

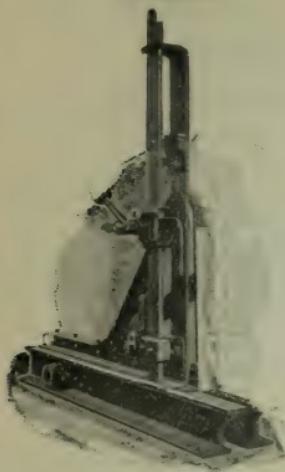
Adjustable, easily operated, with one set-screw. Saws will not pinch. Prevents accidents. No fly-back. Keeps sawdust from operator's face.

No. 1 for Saws 6 to 12 in. diameter.

" 2 " " 10 " 16 " "

" 3 " " 16 " 20 " "

Price, No. 1 or No. 2 each 3.50
" " 3 " 4.00

SINGLE

**IDEAL
SAW MILL
DOGS**

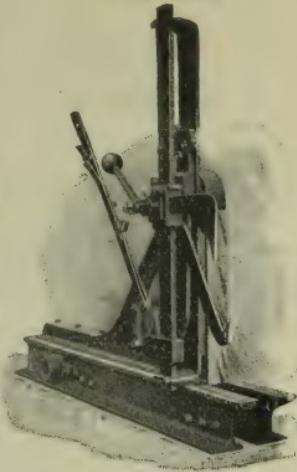
When ordering, state whether Right or Left Hand Machine is wanted.

* Notice the improved locking mechanism on the Single Dog, by which the dog bit is locked at any point as it is forced in to the timber. This device is controlled by the power lever and is entirely automatic in its operation.

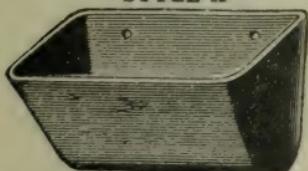
* B3612

[†] Knight's Ideal Duplex Dog resembles in design the Single Dog, differing only in that it catches the log from above and below.

[†] B3613

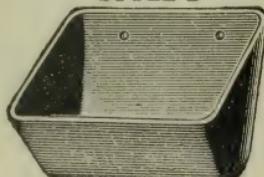
DUPLEX

| No. | Mills Used On | Height | Size Guide Bar | Size Slide Bar | Size Dog Bit | Slide Heads | WEIGHT | | PRICE, PAIR | |
|--------|---------------|--------|---------------------------------|---------------------------------|---------------------------------|--------------|---------|---------|-------------|--------|
| | | | | | | | Single | Duplex | Single | Duplex |
| 1 | Pony | 38 in. | 3 $\frac{1}{2}$ | 2 $\frac{1}{2}$ | 1 $\frac{1}{2}$ x $\frac{1}{2}$ | Cast | 60 lbs. | 80 lbs. | 25.00 | 45.00 |
| 2 | Medium | 41 " | 3 $\frac{1}{2}$ x $\frac{1}{2}$ | 2 $\frac{1}{2}$ x $\frac{1}{2}$ | 2 x $\frac{1}{2}$ | " | 95 " | 110 " | 30.00 | 50.00 |
| 3 | Heavy..... | 45 " | 4 x $\frac{1}{2}$ | 3 x $\frac{1}{2}$ | 2 $\frac{1}{2}$ x $\frac{1}{2}$ | Forged Steel | 115 " | 125 " | 35.00 | 55.00 |
| 3 Sp'l | " Steam Feed | 49 " | 4 x $\frac{1}{2}$ | 3 x $\frac{1}{2}$ | 2 $\frac{1}{2}$ x $\frac{1}{2}$ | | 135 " | 150 " | 60.00 | 85.00 |
| 4 | Extra Heavy | 51 " | 5 x $\frac{1}{2}$ | 3 $\frac{1}{2}$ x $\frac{1}{2}$ | 2 $\frac{1}{2}$ x $\frac{1}{2}$ | " | 175 " | 235 " | 85.00 | 125.00 |

STYLE A

**MALLEABLE
IRON
ELEVATOR
BUCKETS**

B3620

STYLE B**STYLE A**

B3621

| Length | Width | Depth | Price | Capacity Cubic In. | Capacity Quarts | Length | Width | Depth | Price | Capacity Cubic In. | Capacity Quarts |
|--------|-----------------|-----------------|-------|--------------------|-----------------|--------|-------|-----------------|-------|--------------------|-----------------|
| 4 | 2 $\frac{3}{4}$ | 2 $\frac{1}{2}$ | .20 | 14 | .21 | 12 | 6 | 5 | 1.20 | 205 | 3. |
| 5 | 3 $\frac{1}{2}$ | 3 | .35 | 25 | .38 | 12 | 7 | 5 $\frac{1}{2}$ | 1.25 | 260 | 4. |
| 6 | 4 | 3 $\frac{1}{2}$ | .45 | 42 | .63 | 14 | 7 | 5 $\frac{1}{2}$ | 1.75 | 310 | 4.62 |
| 7 | 4 $\frac{1}{2}$ | 4 | .55 | 65 | .97 | 16 | 7 | 5 $\frac{1}{2}$ | 2.25 | 360 | 5.37 |
| 8 | 5 | 4 | .65 | 95 | 1.41 | 18 | 7 | 5 $\frac{1}{2}$ | 3.50 | 410 | 6.10 |
| 10 | 6 | 5 | .90 | 175 | 2.61 | 18 | 10 | 7 | 4.50 | 1175 | 17.5 |
| 11 | 6 | 5 | 1.00 | 190 | 2.84 | 20 | 7 | 5 $\frac{1}{2}$ | 3.75 | 460 | 7. |

STYLE B

| | | | | | | | | | | | |
|----|-----------------|-----------------|-----|-----|------|-----|-----------------|-----|------|-----|------|
| 6 | 3 $\frac{1}{2}$ | 2 $\frac{1}{2}$ | .48 | 38 | .57 | 14 | 5 $\frac{1}{2}$ | 4 | 1.40 | 180 | 2.80 |
| 8 | 3 $\frac{1}{2}$ | 2 $\frac{1}{2}$ | .50 | 50 | .75 | 16 | 5 $\frac{1}{2}$ | 4 | 1.80 | 200 | 3.00 |
| 10 | 4 | 3 | .70 | 110 | 1.65 | 18 | 5 $\frac{1}{2}$ | 4 | 2.00 | 220 | 3.30 |
| 12 | 5 $\frac{1}{2}$ | 4 | .90 | 160 | 2.40 | ... | ... | ... | ... | ... | ... |

Punched for belt or chain as wanted. If buckets are to replace others or to go on belt already punched, send template.

"SALEM"
ELEVATOR



**STEEL
BUCKETS**

B3622

| SIZE OF BUCKET | SUITABLE FOR ORDINARY MILL AND ELEVATOR WORK | | | SUITABLE FOR EAR CORN, CORN AND COB, AND SIMILAR HEAVY SUBSTANCES | | | SIZE OF BUCKET | SUITABLE FOR ORDINARY MILL AND ELEVATOR WORK | | | SUITABLE FOR EAR CORN, CORN AND COB, AND SIMILAR HEAVY SUBSTANCES | | |
|----------------------|---|----------------------|------------------------|--|-----------------------|----------------------|------------------------|---|-----------------------|----------------------|--|------------|-----------------------|
| | Width on Belt, In. | Projection Inches | Gauge of Steel Used | Price Each | Width on Belt, In. | Projection Inches | Gauge of Steel Used | Price Each | Width on Belt, In. | Projection Inches | Gauge of Steel Used | Price Each | Width on Belt, In. | Projection Inches |
| 2 | 2 | 25 | .04 | 18 | .16 | 10 | 19 | .54 | 16 | .76 | 14 | .88 | |
| 2½ | 2¼ | 24 | .05 | 18 | .18 | 10 | 18 | .62 | 16 | .81 | 14 | .90 | |
| 3 | 2½ | 24 | .06 | 18 | .19 | 11 | 18 | .65 | 16 | .85 | 14 | .94 | |
| 3½ | 2½ | 24 | .07 | 18 | .20 | 12 | 18 | .68 | 16 | .89 | 14 | .98 | |
| 3 | 3 | 23 | .09 | 16 | .28 | 14 | 18 | .74 | 16 | .97 | 14 | 1.06 | |
| 3½ | 3 | 23 | .10 | 16 | .29 | 16 | 18 | .81 | 16 | 1.05 | 14 | 1.15 | |
| 4 | 3 | 23 | .11 | 16 | .30 | 18 | 18 | .89 | 16 | 1.13 | 14 | 1.25 | |
| 4½ | 3 | 23 | .12 | 16 | .31 | 20 | 18 | .95 | 16 | 1.21 | 14 | 1.35 | |
| 4 | 3½ | 22 | .12 | 16 | .33 | 14 | 18 | .73 | 16 | 1.01 | 14 | 1.10 | |
| 4½ | 3½ | 22 | .13 | 16 | .34 | 14 | 18 | .76 | 16 | 1.05 | 14 | 1.15 | |
| 5 | 3½ | 22 | .14 | 16 | .35 | 14 | 18 | .80 | 16 | 1.09 | 14 | 1.20 | |
| 4 | 22 | .18 | .16 | .39 | 14 | .44 | 14 | .88 | 16 | 1.17 | 14 | 1.30 | |
| 5½ | 4 | 21 | .19 | 16 | .40 | 14 | .45 | 16 | .96 | 16 | 1.25 | 14 | 1.40 |
| 6 | 4 | 21 | .20 | 16 | .41 | 14 | .46 | 18 | 1.04 | 16 | 1.33 | 14 | 1.50 |
| 7 | 4½ | 20 | .30 | 16 | .49 | 14 | .54 | 20 | 1.12 | 16 | 1.41 | 14 | 1.62 |
| 8 | 5 | 19 | .41 | 16 | .59 | 14 | .66 | 16 | 1.14 | 16 | 1.41 | 14 | 1.69 |
| 9 | 5 | 19 | .43 | 16 | .63 | 14 | .70 | 18 | 1.22 | 16 | 1.51 | 14 | 1.81 |
| | | | | | | | | 20 | 1.30 | 16 | 1.61 | 14 | 1.93 |

Odd and extra heavy sizes quoted on application.

TIN ELEVATOR BUCKETS — B3624

| Across Belt. | Projection | Capacity Pints | List | Across Belt. | Projection | Capacity Pints | List |
|-----------------|------------|-------------------|------|-----------------|------------|-------------------|------|
| 2 | x 2 | 1/6 | .07 | 4 | x 3 1/2 | 7/8 | .13 |
| 2½ | x 2 1/4 | 2/4 | .08 | 4½ | x 3 1/2 | 1 | .14 |
| 3 | x 3 | 2 5/5 | .09 | 5 | x 4 | 1 1/2 | .16 |
| 3½ | x 3 | 1 1/2 | .10 | 5½ | x 4 | 1 1/3 | .17 |
| 4 | x 3 | 2/3 | .12 | 6 | x 4 | 1 1/4 | .18 |

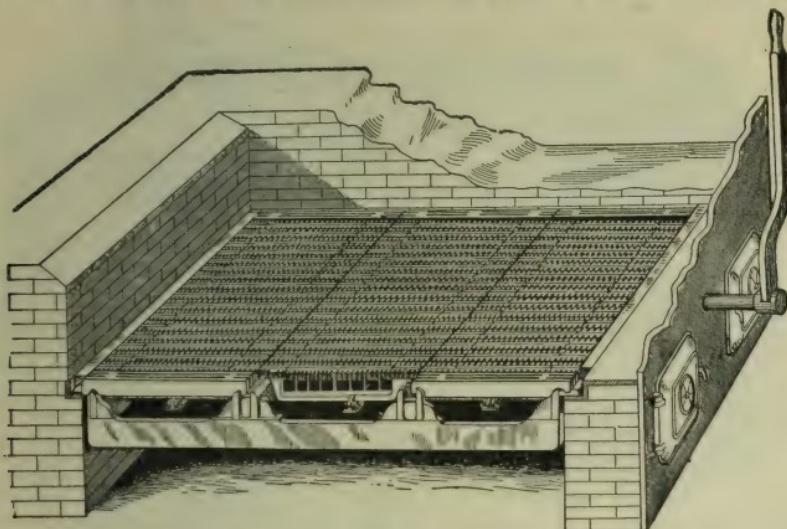
SHEET STEEL CORN BUCKETS WITH BANDS — B3626

| Across Belt. | Projec- tion | Number of Bolt Holes | Capacity Quarts | List | Across Belt. | Projec- tion | Number of Bolt Holes | Capacity Quarts | List |
|-----------------|-----------------|----------------------------|--------------------|------|-----------------|-----------------|----------------------------|--------------------|------|
| 7 | x 5 | 3 | 1 1/2 | .33 | 13 | x 7 | 4 | 4 1/2 | .62 |
| 8 | x 5 1/2 | 3 | 2 | .36 | 14 | x 7 | 4 | 5 | .65 |
| 9 | x 6 | 3 | 2 1/2 | .40 | 15 | x 7 | 5 | 5 1/2 | .70 |
| 10 | x 6 | 3 | 3 | .44 | 16 | x 7 | 5 | 6 | .76 |
| 11 | x 7 | 4 | 3 1/2 | .56 | 18 | x 7 | 6 | 7 | .82 |
| 12 | x 7 | 4 | 4 | .59 | 20 | x 7 | 6 | 9 | .90 |

Odd sizes extra, according to size and cost.

As indicated by the name, the above buckets are intended for handling ear corn, and corn and cobs, and for these purposes they are unexcelled.

THE MARTIN ANTI-FRICTION ROCKING GRATE



B3630

Price, \$5.00 per square foot of grate surface.

The illustration shows setting commonly used for a horizontal return tubular boiler.

Slack and screenings on a Martin Grate will give as good steam results as high priced coal on plain grate.

The grate is made to suit any size and grade of coal — by a simple rearrangement of the bars the openings can be changed in a few minutes to suit fine or coarse grades of coal. The Martin Grate averages over 80 pounds to the square foot — the bars vary in length from 18 inch to 30 inch. Very simple in construction; having few parts can be installed by any engineer. No change of the fire-box required; the only cutting required is a 2-inch hole through the boiler front for the shaker rod. For furnaces 5½ feet or less in depth a grate two sections deep is used. Where it is over 5½ feet deep it is furnished in three sections as illustrated above. When furnace is over 6 feet wide, and for most water-tube boilers, the grate is split down the centre so that half the fire can be cleaned at a time without disturbing the other half.

COMMON PLAIN GRATE BARS



B3631

HERRING-BONE GRATE BARS

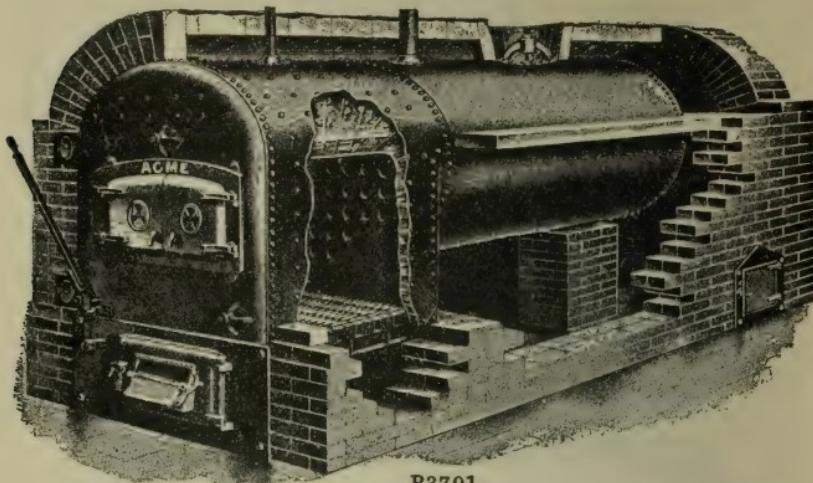


B3632

State length bars wanted, and width to be covered. Prices on application.

ACME FIRE BOX HOUSE HEATING BOILERS

Showing Brick Setting



B3701

**For Brick Setting. Without Domes. Manholes in all Boilers over
30 inches Diameter**

| Number..... | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|--------|--------|--------|--------|--------|--------|--------|
| Diameter of Shell..... inches | 30 | 30 | 30 | 36 | 36 | 36 | 42 |
| Length over all..... feet | 6½ | 7½ | 8½ | 7½ | 9 | 10½ | 8½ |
| Length of Fire Box..... inches | 26 | 32 | 38 | 32 | 38 | 44 | 38 |
| Width of Fire Box..... " | 24 | 24 | 24 | 30 | 30 | 30 | 36 |
| Fire Doors { Single Doors..... " | 12x18 | 12x18 | 12x18 | .... | .... | .... | .... |
| Fire Doors { Double Doors..... " | .... | .... | .... | 16x22 | 16x22 | 16x22 | 16x24 |
| Approx. weight of Boiler complete, with castings... lbs. | 2450 | 2750 | 3150 | 3450 | 3850 | 4350 | 4500 |
| Steam Tapping { Steam outlet..... | 3 | 3 | 4 | 4 | 4 | 4 | 6 |
| Steam Tapping { Return Outlet..... | 2½ | 2½ | 3 | 3 | 3 | 3 | 4 |
| Water Tapping—Flow and Return, 2 each | 4 | 4 | 4 | 5 | 5 | 5 | 5 |
| Size of Smoke Pipe..... inches | 14 | 14 | 14 | 16 | 16 | 16 | 18 |
| Rating Steam..... square feet | 900 | 1000 | 1200 | 1400 | 1700 | 2100 | 2200 |
| Rating Water..... " | 1400 | 1600 | 1900 | 2200 | 2700 | 3400 | 3500 |
| Price, complete, with Castings and Trimmings..... | 308.00 | 318.00 | 339.00 | 394.00 | 419.00 | 454.00 | 483.00 |
| Deduct for Trimmings omitted | 15.00 | 15.00 | 15.00 | 17.00 | 17.00 | 17.00 | 20.00 |
| Price, Water Boiler..... | 295.00 | 310.00 | 330.00 | 390.00 | 415.00 | 450.00 | 475.00 |

| Number | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|--|--------|--------|--------|--------|--------|--------|--------|
| Diameter of Shell..... inches | 42 | 42 | 48 | 48 | 48 | 54 | 54 |
| Length over all..... feet | 10 | 11½ | 10½ | 12 | 13½ | 14 | 16½ |
| Length of Fire Box..... inches | 44 | 50 | 44 | 50 | 56 | 56 | 62 |
| Width of Fire Box..... " | 36 | 36 | 42 | 42 | 42 | 48 | 48 |
| Fire Doors { Single Doors..... " | 16x24 | 16x24 | 18x30 | 18x30 | 18x30 | 18x30 | 18x30 |
| Fire Doors { Double Doors..... " | .... | .... | .... | .... | .... | .... | .... |
| Approx. weight of Boiler complete, with castings... lbs. | 5000 | 5650 | 6650 | 7350 | 8000 | 9100 | 10250 |
| Steam Tapping { Steam Outlet..... | 6 | 6 | 6 | 6 | 7 | 7 | 7 |
| Steam Tapping { Return Outlet..... | 4 | 4 | 4 | 4 | 5 | 5 | 5 |
| Water Tapping—Flow and Return, 2 each | 6 | 6 | 6 | 6 | 7 | 7 | 7 |
| Size of Smoke Pipe..... inches | 18 | 18 | 22 | 22 | 22 | 24 | 24 |
| Rating Steam..... square feet | 2500 | 2900 | 3200 | 3800 | 4400 | 4900 | 5800 |
| Rating Water..... " | 4000 | 4600 | 5100 | 6100 | 7000 | 7800 | 9300 |
| Price, complete, with Castings and Trimmings..... | 533.00 | 583.00 | 653.00 | 703.00 | 763.00 | 888.00 | 963.00 |
| Deduct for Trimmings omitted | 20.00 | 20.00 | 20.00 | 20.00 | 27.00 | 27.00 | 27.00 |
| Price, Water Boiler..... | 525.00 | 575.00 | 645.00 | 695.00 | 755.00 | 880.00 | 955.00 |

Nos. 15, 16, 17, 18, 19, and 20 quoted on application.

No extra charge made for hoe and poker shipped with boiler. Tubes inserted in fire box for domestic coil will be charged extra, \$2.00 net.

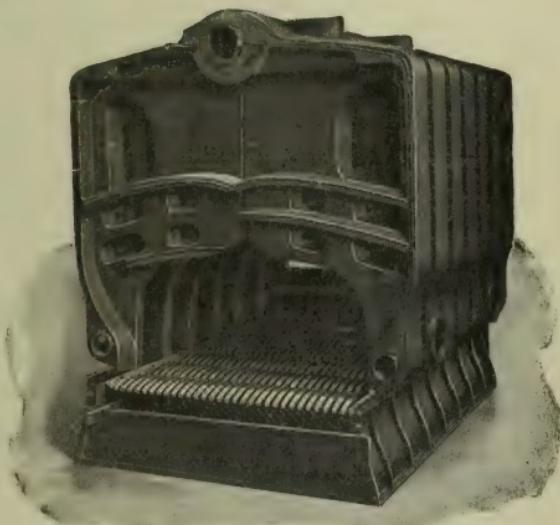


IDEAL SECTIONAL BOILERS

Showing the 28-inch Steam
Boiler Complete

No. S-28-7 BOILER

B3702



Rear Sectional View of
48-inch Water Boiler

No. W-48-8 BOILER

B3703

NOTE.—Rated Capacity is for direct radiation and all piping, flow, and return. Ideal Sectional Boilers are made especially for Hard Coal, for Soft Coal, and for Coke.

The illustrations are of boilers for coal. The firing door in the coke boiler is higher up, giving room for a deeper bed of coke.

These Coke Boilers also yield good results when used with hard coal, the magazine feature enabling the Boilers to run a long time with one firing. The construction of this Boiler makes it adaptable for burning gas as fuel.

Do not bush flow pipe outlets on the Steam Boilers—connect all of them full size to the main.

For Price List of Boilers, see next page.

IDEAL SECTIONAL BOILERS

Can be fitted specially for burning wood. When soft coal is to be used a size larger boiler should be selected than would be required for hard coal.

| STEAM BOILER (COAL) | | | WATER BOILER (COAL) | | | DIMENSIONS, STEAM OR WATER | | | | | |
|---------------------|----------------|--------------------|---------------------|----------------|--------------------|----------------------------|-------------------|-------------------------------------|---------------|---------|--------|
| Number | Price Complete | Ratings (See Note) | Number | Price Complete | Ratings (See Note) | Sections | *L'gth Inches | Foundation Inside Inches | Fire Pot Area | Outlets | Inches |
| S-48-6 | 1234.00 | 4750 | W-48-6 | 1274.00 | 7825 | 6 | 64 $\frac{1}{4}$ | 56 x 52 | 50 x 53 | 2-6 | |
| S-48-7 | 1484.00 | 5700 | W-48-7 | 1464.00 | 9400 | 7 | 75 $\frac{1}{2}$ | 66 $\frac{3}{4}$ x 52 | 50 x 64 | 2-6 | |
| S-48-8 | 1674.00 | 6650 | W-48-8 | 1654.00 | 10975 | 8 | 86 $\frac{1}{4}$ | 77 $\frac{1}{2}$ x 52 | 50 x 75 | 3-6 | |
| S-48-9 | 1864.00 | 7600 | W-48-9 | 1844.00 | 12550 | 9 | 97 | 88 $\frac{1}{4}$ x 52 | 50 x 85 | 3-6 | |
| S-48-10 | 2054.00 | 8550 | W-48-10 | 2034.00 | 14125 | 10 | 107 $\frac{1}{4}$ | 99 x 52 | 50 x 96 | 3-6 | |
| S-36-5 | 730.00 | 2100 | W-36-5 | 710.00 | 3450 | 5 | 47 $\frac{1}{4}$ | 47 x 44 $\frac{3}{4}$ | 41 x 36 | 2-5 | |
| S-36-6 | 845.00 | 2625 | W-36-6 | 825.00 | 4325 | 6 | 56 $\frac{1}{2}$ | 47 x 53 $\frac{1}{2}$ | 41 x 45 | 2-5 | |
| S-36-7 | 960.00 | 3150 | W-36-7 | 940.00 | 5200 | 7 | 66 | 47 x 63 | 41 x 54 | 3-5 | |
| S-36-8 | 1075.00 | 3675 | W-36-8 | 1055.00 | 6050 | 8 | 75 $\frac{1}{8}$ | 47 x 72 $\frac{1}{8}$ | 41 x 63 | 3-5 | |
| S-36-9 | 1190.00 | 4200 | W-36-9 | 1170.00 | 6925 | 9 | 84 $\frac{1}{4}$ | 47 x 81 $\frac{1}{4}$ | 41 x 72 | 4-5 | |
| S-28-5 | 490.00 | 1300 | W-28-5 | 480.00 | 2150 | 5 | 42 | 39 x 39 | 33 x 31 | 2-4 | |
| S-28-6 | 587.00 | 1625 | W-28-6 | 577.00 | 2675 | 6 | 50 | 39 x 47 | 33 x 39 | 2-4 | |
| S-28-7 | 684.00 | 1950 | W-28-7 | 674.00 | 3200 | 7 | 58 | 39 x 55 | 33 x 47 | 3-4 | |
| S-28-8 | 781.00 | 2275 | W-28-8 | 761.00 | 3725 | 8 | 66 | 39 x 63 | 33 x 55 | 3-4 | |
| S-22-5 | 340.00 | 800 | W-22-5 | 330.00 | 1300 | 5 | 88 | 31 x 35 | 25 x 28 | 2-4 | |
| S-22-6 | 400.00 | 1000 | W-22-6 | 390.00 | 1650 | 6 | 45 | 31 x 42 | 25 x 35 | 2-4 | |
| S-22-7 | 460.00 | 1200 | W-22-7 | 450.00 | 2000 | 7 | 52 | 31 x 49 | 25 x 42 | 3-4 | |
| S-22-8 | 520.00 | 1400 | W-22-8 | 510.00 | 2350 | 8 | 59 | 31 x 56 | 25 x 49 | 3-4 | |
| S-15-4 | 157.00 | 300 | W-15-4 | 147.00 | 500 | 4 | 27 $\frac{1}{2}$ | 24 $\frac{1}{4}$ x 25 $\frac{3}{4}$ | 19 x 18 | 2-3 | |
| S-15-5 | 210.00 | 425 | W-15-5 | 200.00 | 700 | 5 | 33 $\frac{1}{4}$ | 30 $\frac{1}{2}$ x 25 $\frac{3}{4}$ | 19 x 25 | 2-3 | |
| S-15-6 | 245.00 | 550 | W-15-6 | 235.00 | 900 | 6 | 40 | 36 $\frac{3}{4}$ x 25 $\frac{3}{4}$ | 19 x 31 | 2-3 | |
| S-15-7 | 302.50 | 675 | W-15-7 | 292.50 | 1100 | 7 | 46 $\frac{1}{4}$ | 43 x 25 $\frac{3}{4}$ | 19 x 37 | 2-3 | |
| S-15-8 | 340.00 | 800 | W-15-8 | 330.00 | 1300 | 8 | 53 $\frac{1}{2}$ | 46 $\frac{1}{4}$ x 25 $\frac{3}{4}$ | 19 x 43 | 2-3 | |

*Add to length for Smoke Hood, S-48 and W-48 sizes, 27 $\frac{1}{4}$ inches; S-36 and W-36 sizes, 22 inches; S-28 and W-28 sizes, 18 inches; S-22 and W-22 sizes, 15 $\frac{1}{4}$ inches; S-15 and W-15 sizes, 13 $\frac{5}{8}$ inches.

Size **Smoke Pipe**: For No. 48 sizes, 21 inches; No. 36 sizes, 15 inches; No. 28 sizes, 12 inches; No. 22 sizes, 10 inches; No. 15 sizes, 8 inches.

Height and Width of Boilers, including trimmings: No. 48 sizes, Steam 97x80 in., Water 81 $\frac{1}{4}$ x68 in.; No. 36 sizes, Steam 83x64 in., Water 70x53 $\frac{1}{4}$ in.; No. 28 sizes, Steam 75 $\frac{1}{2}$ x53 $\frac{1}{2}$ in., Water 60 $\frac{1}{2}$ x44 in.; No. 22 sizes, Steam 67 $\frac{1}{4}$ x45 $\frac{1}{4}$ in., Water 52 $\frac{1}{4}$ x36 in.; No. 15 sizes, Steam 61 $\frac{1}{2}$ x38 $\frac{1}{4}$ in., Water 42 $\frac{7}{16}$ x27 $\frac{1}{2}$ in.

COKE BOILERS (See Note, bottom of preceding page)

| STEAM BOILER | | | WATER BOILER | | | DIMENSIONS, STEAM AND WATER | | | | | | | |
|--------------|----------------|--------------------|--------------|----------------|--------------------|-----------------------------|------------------------|-------------------|--------------|------------------------|---------|------------|-----|
| No. | Price Complete | Ratings (See Note) | No. | Price Complete | Ratings (See Note) | Sections | Length with Smoke Hood | Foundation Inches | Grate Inches | Average Firepot Inches | Outlets | Smoke Pipe | |
| S-2-4 | 140.00 | 225 | 65 35 44 | W-2-4 | 130.00 | 375 | 49 24 | 4 | 35 | 23 x 24 | 10 x 16 | 15 x 16 | 2-3 |
| S-2-5 | 170.00 | 300 | 65 35 44 | W-2-5 | 160.00 | 500 | 49 24 | 5 | 40 | 28 x 24 | 10 x 21 | 15 x 21 | 2-3 |
| S-2-6 | 200.00 | 375 | 65 35 44 | W-2-6 | 190.00 | 625 | 49 24 | 6 | 45 | 33 x 24 | 10 x 26 | 15 x 26 | 2-3 |
| S-2-7 | 230.00 | 450 | 65 35 44 | W-2-7 | 220.00 | 750 | 49 24 | 7 | 50 | 38 x 24 | 10 x 32 | 15 x 32 | 2-3 |
| S-3-5 | 260.00 | 500 | 67 42 46 | W-3-5 | 250.00 | 825 | 52 31 | 5 | 43 | 32 x 30 | 12 x 25 | 18 x 25 | 2-3 |
| S-3-6 | 295.00 | 600 | 67 42 46 | W-3-6 | 285.00 | 1000 | 52 31 | 6 | 50 | 38 x 30 | 12 x 31 | 18 x 32 | 2-3 |
| S-3-7 | 330.00 | 700 | 67 42 46 | W-3-7 | 320.00 | 1150 | 52 31 | 7 | 56 | 45 x 30 | 12 x 38 | 18 x 38 | 2-3 |
| S-4-5 | 375.00 | 800 | 76 47 56 | W-4-5 | 365.00 | 1325 | 63 36 | 5 | 50 | 36 x 36 | 17 x 29 | 24 x 29 | 2-4 |
| S-4-6 | 445.00 | 1000 | 76 47 56 | W-4-6 | 435.00 | 1650 | 63 36 | 6 | 57 | 44 x 36 | 17 x 36 | 24 x 36 | 2-4 |
| S-4-7 | 515.00 | 1200 | 76 47 56 | W-4-7 | 505.00 | 2000 | 63 36 | 7 | 64 | 51 x 36 | 17 x 44 | 24 x 44 | 2-4 |
| S-5-5 | 600.00 | 1400 | 82 59 62 | W-5-5 | 590.00 | 2325 | 70 48 | 5 | 52 | 40 x 42 | 33 x 22 | 33 x 32 | 2-4 |
| S-5-6 | 690.00 | 1700 | 82 59 62 | W-5-6 | 675.00 | 2800 | 70 48 | 6 | 60 | 48 x 42 | 41 x 22 | 41 x 32 | 2-4 |
| S-5-7 | 780.00 | 2000 | 82 59 62 | W-5-7 | 760.00 | 3300 | 70 48 | 7 | 69 | 57 x 42 | 49 x 22 | 49 x 32 | 3-4 |
| S-5-8 | 870.00 | 2300 | 82 59 62 | W-5-8 | 845.00 | 3800 | 70 48 | 8 | 77 | 65 x 42 | 58 x 22 | 58 x 32 | 3-4 |
| S-5-9 | 960.00 | 2600 | 82 59 62 | W-5-9 | 930.00 | 4300 | 70 48 | 9 | 85 | 73 x 42 | 66 x 22 | 66 x 32 | 4-4 |

NOTE: Rating. All piping, flow and return, figured as radiating surface.



B3710

HARD COAL BOILERS**IDEAL ARCO BOILERS**

Hard Coal — Steam

No. 2-22-S BOILER (Patented)

| STEAM | | | | | | WATER | | | | | |
|--------|----------------|--------------------|-------------------------------|---------------------------------------|--------------|--------|----------------|--------------------|-------------------------------|---|--|
| No. | Price Complete | Ratings (See Note) | Height (to top Outlet) Inches | One Outlet and Two Inlets Size Inches | Diam. Inches | No. | Price Complete | Ratings (See Note) | Height (to top Outlet) Inches | Outlets and Inlets Two Each Size Inches | |
| 2-19-S | 167.00 | 350 | 57 | 2½ | 30½ | 2-19-W | 158.00 | 575 | 50¾ | 2½ | |
| 3-19-S | 193.00 | 400 | 61½ | 2½ | 30½ | 3-19-W | 184.50 | 650 | 54¾ | 2½ | |
| 2-22-S | 226.00 | 525 | 58¾ | 3 | 35 | 2-22-W | 217.50 | 875 | 52¼ | 3 | |
| 3-22-S | 240.00 | 575 | 63¾ | 3 | 35 | 3-22-W | 230.00 | 950 | 57¼ | 3 | |
| 2-25-S | 277.50 | 625 | 61¾ | 3½ | 38 | 2-25-W | 270.00 | 1025 | 55 | 3½ | |
| 3-25-S | 300.00 | 700 | 66¾ | 3½ | 38 | 3-25-W | 290.00 | 1150 | 60 | 3½ | |
| 2-28-S | 360.50 | 900 | 62½ | 4 | 41¾ | 2-28-W | 350.50 | 1500 | 55½ | 4 | |
| 3-2-S | 389.50 | 1000 | 67 7/16 | 4 | 41¾ | 3-28-W | 380.00 | 1650 | 60½ | 4 | |
| 2-31-S | 470.00 | 1275 | 66 | 4 | 44½ | 2-31-W | 457.50 | 2100 | 59 | 4 | |
| 3-31-S | 500.00 | 1400 | 71 7/8 | 4 | 44½ | 3-31-W | 495.00 | 2325 | 64¾ | 4 | |
| 2-34-S | 530.00 | 1500 | 69 | 5 | 48¾ | 2-34-W | 525.00 | 2475 | 61½ | 5 | |
| 3-31-S | 575.00 | 1650 | 75 | 5 | 48¾ | 3-34-W | 565.00 | 2725 | 66¾ | 5 | |

SOFT COAL BOILERS

| | | | | | | | | | | |
|--------|--------|------|-----|----|-----|--------|--------|------|-----|----|
| 1-19-S | 140.50 | 275 | 52¾ | 2½ | 30½ | 1-19-W | 131.50 | 450 | 45¾ | 2½ |
| 1-22-S | 193.00 | 400 | 54¾ | 3 | 35 | 1-22-W | 184.00 | 650 | 48¼ | 3 |
| 1-25-S | 219.50 | 500 | 56¾ | 3½ | 38 | 1-25-W | 210.50 | 825 | 50 | 3½ |
| 1-28-S | 331.00 | 800 | 57¾ | 4 | 41¾ | 1-28-W | 321.00 | 1325 | 50½ | 4 |
| 1-31-S | 389.50 | 1000 | 60¾ | 4 | 44½ | 1-31-W | 380.00 | 1650 | 54¾ | 4 |
| 1-34-S | 462.50 | 1250 | 64 | 5 | 48¾ | 1-34-W | 450.00 | 2075 | 56¼ | 5 |

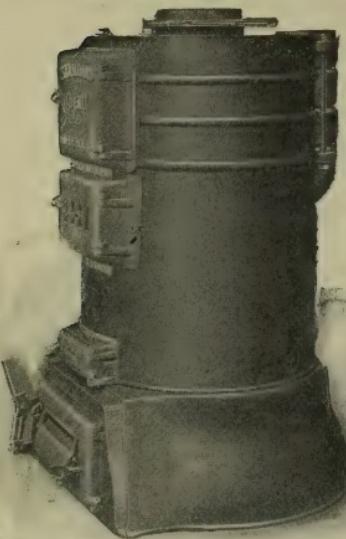
Grate Diameter is indicated by the second figures of the numbers.

Size of Smoke Pipe for Boilers: With 19-inch grates, 8-inch; 22-inch and 25-inch grates, 9-inch; 28-inch and 31-inch grates, 10-inch; 34-inch grates, 11-inch.

NOTE: Ratings. All pipe, flow and return to be figured as radiating surface.

IDEAL STANDARD WATER BOILERS

No. 3-24-W BOILER



B3715

IDEAL LAUNDRY WATER HEATER

No. 1-C



B3718

Price Each, \$31.00.

See dimensions at bottom of page.

| No. | Heights to Top Outlet, Inches | Diameter of Grate Inches | Diameter of Base Inches | Outlet and Inlet Inches | Smoke Pipe Inches | Ratings (See Note) Inches | List Prices |
|--------|----------------------------------|-----------------------------|----------------------------|----------------------------|----------------------|------------------------------|----------------|
| 17-3-W | 49 $\frac{1}{4}$ | 28 $\frac{3}{4}$ | 17 | 3 | 7 | 500 | 140.50 |
| 17-4-W | 53 $\frac{1}{4}$ | 28 $\frac{3}{4}$ | 17 | 3 | 7 | 550 | 153.50 |
| 17-5-W | 57 $\frac{1}{4}$ | 28 $\frac{3}{4}$ | 17 | 3 | 7 | 600 | 164.50 |
| 19-3-W | 50 | 30 $\frac{1}{2}$ | 19 | 3 | 8 | 750 | 197.00 |
| 19-4-W | 54 | 30 $\frac{1}{2}$ | 19 | 3 | 8 | 825 | 210.50 |
| 19-5-W | 58 | 39 $\frac{1}{2}$ | 19 | 3 | 8 | 900 | 224.00 |
| 22-3-W | 58 | 35 | 22 | 4 | 9 | 875 | 217.50 |
| 22-4-W | 57 $\frac{1}{2}$ | 35 | 22 | 4 | 9 | 950 | 230.00 |
| 22-5-W | 62 | 35 | 22 | 4 | 9 | 1025 | 270.00 |
| 25-3-W | 54 | 38 | 25 | 4 | 10 | 1250 | 307.00 |
| 25-4-W | 58 $\frac{1}{2}$ | 38 | 25 | 4 | 10 | 1350 | 325.00 |
| 25-5-W | 63 | 38 | 25 | 4 | 10 | 1425 | 340.00 |
| 28-3-W | 57 | 41 $\frac{3}{4}$ | 28 | 5 | 11 | 1500 | 350.50 |
| 28-4-W | 62 | 41 $\frac{3}{4}$ | 28 | 5 | 11 | 1600 | 372.50 |
| 28-5-W | 67 | 41 $\frac{3}{4}$ | 28 | 5 | 11 | 1700 | 389.50 |
| 31-3-W | 58 | 44 $\frac{1}{2}$ | 31 | 5 | 12 | 1750 | 398.00 |
| 31-4-W | 63 | 44 $\frac{1}{2}$ | 31 | 5 | 12 | 1950 | 431.00 |
| 31-5-W | 68 | 44 $\frac{1}{2}$ | 31 | 5 | 12 | 2050 | 448.00 |
| 34-3-W | 59 | 48 $\frac{1}{2}$ | 34 | 6 | 13 | 2350 | 501.50 |
| 34-4-W | 64 | 48 $\frac{1}{2}$ | 34 | 6 | 13 | 2500 | 530.50 |
| 34-5-W | 69 | 48 $\frac{1}{2}$ | 34 | 6 | 13 | 2650 | 555.00 |

IDEAL LAUNDRY WATER HEATER — B3718

No. 1-C. Height Outlet, 21 $\frac{1}{8}$ in.;
Diam. 27 $\frac{1}{2}$ in. over all; Water Con-
nections, 1 in.; Smoke Pipe, 6 in.

NOTE: All pipes, flow and return are figured as radiating surface.

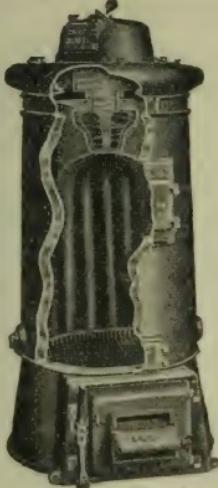
WATER HEATERS

IDEAL JUNIOR
Size No. 12
Heater

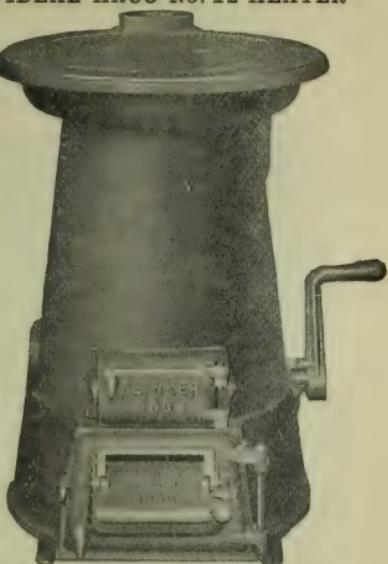
IDEAL PREMIER
JUNIOR
Size No. 152 Heater

IDEAL ARCO No. 12 HEATER

B3720



B3723



B3725

IDEAL JUNIOR**IDEAL PREMIER JUNIOR**

| No. | Height (to Top Outlet) Inches | Diam- eter Inches | Outlets Inches | Tank Capac- ity Gallons | Price Com- plete | No. | Height Outlet Inches | Diam- eter Inches | Outlets Inches | Smoke Collar Inches | Capac- ity Gallons | Price Com- plete |
|-----|--|-------------------------|-------------------|----------------------------------|------------------------|-----|----------------------------|-------------------------|-------------------|---------------------------|--------------------------|------------------------|
| 0 | 31 | 18 | 1-1½ | 100 | 34.00 | 0 | 31 | 18 | 1-1½ | 5 | 100 | 34.00 |
| 10 | 35 | 20¼ | 3-1½ | 150 | 57.00 | 101 | 29½ | 18 | 1-1½ | 5 | 200 | 37.00 |
| 12 | 39½ | 20¼ | 3-1½ | 250 | 73.00 | 121 | 37¼ | 24 | 3-1½ | 6 | 275 | 65.00 |
| 20 | 42½ | 22¾ | 3-2 | 300 | 83.00 | 122 | 42½ | 24 | 3-1½ | 6 | 350 | 77.00 |
| 22 | 46⅓ | 22¾ | 3-2 | 400 | 102.00 | 151 | 42½ | 25¾ | 3-2 | 6 | 450 | 89.00 |
| 30 | 42½ | 26¼ | 3-2 | 525 | 114.00 | 152 | 47¾ | 25¾ | 3-2 | 7 | 600 | 106.00 |
| 32 | 46¾ | 26¼ | 3-2 | 675 | 142.00 | 181 | 44¾ | 27 | 3-2 | 7 | 750 | 118.00 |

Nos. 0 and 101 are not provided with butterfly doors. No. 101 can be so equipped if specified in ordering. None of above Heaters has intermediate section.

Smoke Pipe No. 0, 5-in.; Nos. 10-22, 6-in.; Nos. 30-32, 7-in.

Nos. 0 to 12 have slide center grates; Nos. 20-32 have rocking grates.

No. fire tools supplied with these Heaters.

When soft coal is to be used for fuel, a size larger Heater should be selected than would be required for hard coal.

The amount of radiation a water heater will supply at manufacturer's established basis of rating can be estimated by dividing the tank capacity in gallons by 1.30, since it is generally accepted that a foot of radiation is equal to a tank capacity of 30 per cent more expressed in gallons, or 1.30 gallons.

IDEAL ARCO WATER HEATERS

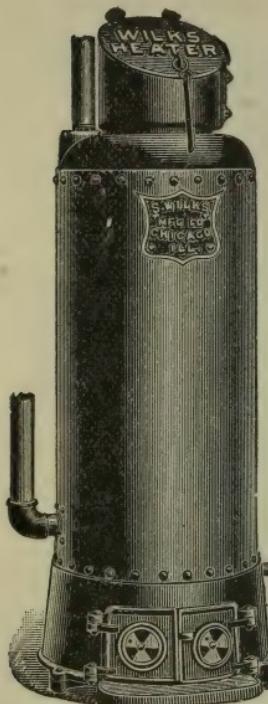
No fire tools supplied with these Heaters.

When soft coal is to be used for fuel, a size larger Heater should be selected than would be required for hard coal.

The amount of radiation a tank heater will supply at manufacturer's established basis of rating can be estimated by dividing the tank capacity in gallons by 1.30, since it is generally accepted that a foot of radiation is equal to a tank capacity of 30 per cent more expressed in gallons or 1.30 gallons.

Measurements given approximate the space occupied by the Heater.

| Size | Height Outlet Inches | Widest Diam. Inches | Outlet and Inlet Inches | Smoke Collar Inches | Tank Capac- ity Gallons | Price Com- plete |
|------|----------------------------|---------------------------|----------------------------------|---------------------------|----------------------------------|------------------------|
| 10 | 21½ | 16 | 1½ | 5 | 85 | 33.00 |
| 12 | 22¾ | 19½ | 1½ | 5 | 130 | 37.00 |
| 15 | 24½ | 21½ | 1½ | 6 | 225 | 50.00 |



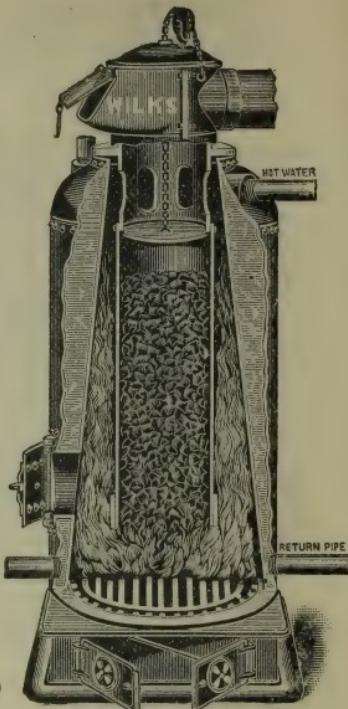
**WILKS
WATER
HEATERS**

For
Greenhouse
Heating, etc.

Small Steam Boilers
quoted on application.

B3729

B3730



**B3729
SMALL PATTERN
NOT SELF FEEDING**
Size of Boiler, Inches

| | Heating Capacity Gallons Per Hour | Price | Size of Openings Inches | Heating Surface Square Inches | Approx. Heating Power 2-in. Pipe Feet | Height From Floor to top Inches | Approx Weight Pounds |
|---|-----------------------------------|-------|-------------------------|-------------------------------|---------------------------------------|---------------------------------|----------------------|
| For Carving Tables, etc..... | 10x18 | 40 | 21.00 | ¾ | 399 | 60 | 25½ |
| For Private Resi- dences, etc. | 12x24 | 65 | 25.00 | 1 | 648 | 100 | 32½ |
| | 12x30 | 75 | 26.50 | 1 | 792 | 125 | 38½ |
| Small Conservator- ies, Laundries, etc. | 14x30 | 100 | 30.00 | 1¼ | 945 | 150 | 40½ |
| | 14x36 | 125 | 32.00 | 1¼ | 1066 | 175 | 46½ |

B3730. LARGE SELF-FEEDING SIZES

| Size of Boiler Inches | Heating Capacity Gallons Per Hour | Price with Coal Magazine | Size of Openings Inches | Approx. Heating Power 4-in. Pipe Feet | Extreme Height of Heater Inches | Approx. Weight Pounds |
|-----------------------|-----------------------------------|--------------------------|-------------------------|---------------------------------------|---------------------------------|-----------------------|
| 16 x 30 | 130 | 57.50 | 1½ | 250 | 57 | 340 |
| 16 x 36 | 160 | 60.00 | 1½ | 300 | 63 | 380 |
| 20 x 30 | 200 | 72.00 | 2 | 425 | 60 | 445 |
| 20 x 36 | 250 | 75.00 | 2 | 450 | 64 | 500 |
| 20 x 42 | 300 | 80.00 | 2 | 500 | 70 | 530 |
| 24 x 36 | 350 | 105.00 | 2 | 700 | 66 | 700 |
| 24 x 42 | 400 | 110.00 | 2 | 900 | 72 | 740 |
| 30 x 42 | 600 | 130.00 | 3 | 1200 | 75 | 1230 |
| 30 x 48 | 700 | 135.00 | 3 | 1250 | 81 | 1280 |
| 36 x 42 | 900 | 185.00 | 3 | 1450 | 75 | 1950 |
| 36 x 48 | 1000 | 195.00 | 3 | 1550 | 81 | 2000 |
| 42 x 42 | 1200 | 215.00 | 3 | 2000 | 76 | 2600 |
| 42 x 48 | 1400 | 225.00 | 3 | 2400 | 82 | 2700 |

ROCOCO ORNAMENTAL RADIATORS

For Steam and for Water

SINGLE COLUMN



B3750

| |
|--|
| Each section is 4½ inches wide. Width of legs, 5½ inches. |
| Height, inch..... 38 32 26 23 20 |
| Rad. surface, per section, square ft..... 3 2½ 2 1¾ 1½ |
| Tapped, 2 inch, and bushed as per B3787. |
| Length of Radiators is 2½ inch for each section (and add ½ inch for each bushing). |

For Steam are connected at bottom with extra heavy right hand screw nipples.
For Water are connected at top and bottom with extra heavy slip nipples.*

This pattern of Single-Column Radiators can be made in special shapes as follows: Concealed Brackets, for Steam or Water; Legs, Extra High Solid, for Steam; Marble Top, with Saddles, for Steam and Water.

Rococo Two-Column Radiators can be made in special shapes as follows: Legs, Extra High Solid, for Steam and Water; Marble Top, with Saddles, for Steam and Water.

*Detroit and Litchfield Water 2-Col. have R. & L. Nipples.

TWO COLUMN



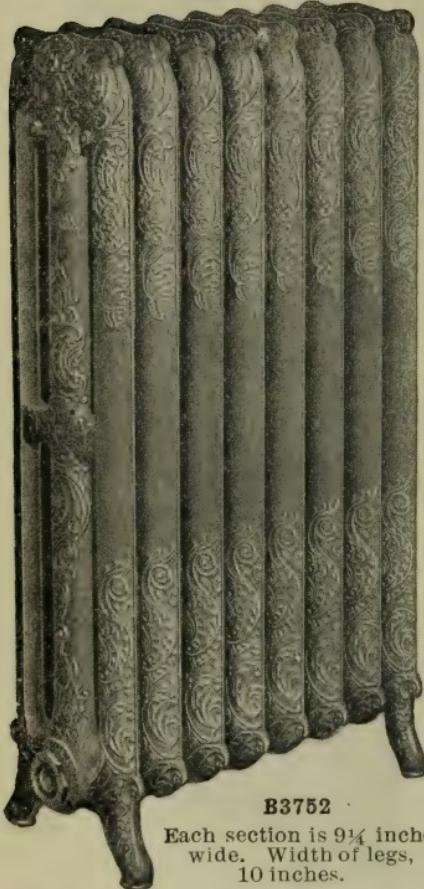
B3751

| |
|---|
| Each section is 7¾ inches wide. Width of legs, 8½ inches. |
| Height, inch.. 45 38 32 26 23 20 |
| Rad. surface, per section, sq. ft..... 5 4 3¾ 2¾ 2½ 2 |

ROCOCO ORNAMENTAL RADIATORS

For Steam and Hot Water

THREE-COLUMN



B3752

Each section is $9\frac{1}{4}$ inches wide. Width of legs, 10 inches.

Height, inches....44 38 32 26 22 18
Rad. surface, per

section, sq. ft... 6 5 $4\frac{1}{2}$ $3\frac{3}{4}$ 3 $2\frac{1}{4}$

Length of Radiators, $2\frac{1}{2}$ in. per section, and add $\frac{1}{2}$ in. for each bushing.

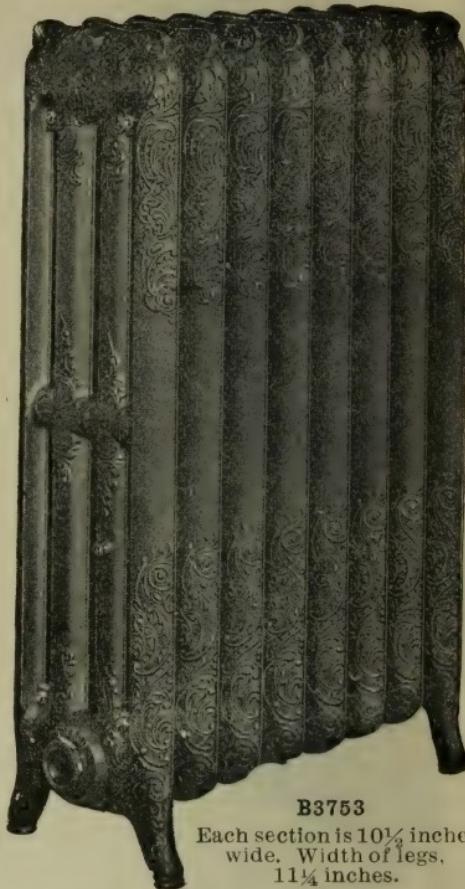
Tapped 2 in. and bushed per **B 3787.**

All Rococo Radiators made at Detroit Plant are connected with extra heavy right and left hand threaded nipples. All Rococo Radiators made at other Plants are connected with extra heavy right hand threaded nipples for steam; extra heavy slip nipple for water.*

Rococo Ornamental Three-Column Radiators are made at Detroit Plant in special shapes and on special orders as follows:

Carpet feet, for steam and water; circular, for steam and water; corner, for steam and water; curved, for steam and water; dining room, 44-in. height only, for steam and water; ventilating; legs, detachable high, for steam and water; legs, extra high solid, for steam and water (Pierce Plant); marble top lugs, for steam and water; marble top saddles, for steam and water (Pierce Plant); concealed brackets, for steam and water (Pierce Plant only).

FOUR-COLUMN



B3753

Each section is $10\frac{1}{2}$ inches wide. Width of legs, $11\frac{1}{4}$ inches.

Height, inches....45 38 32 26 22 18
Rad. surface, per

section, sq. ft... 10 8 $6\frac{1}{2}$ 5 4 3

Length of Radiators, 3 in. per section, and add $\frac{1}{2}$ in. for each bushing.

Tapped 2 in. and bushed per **B 3787.**

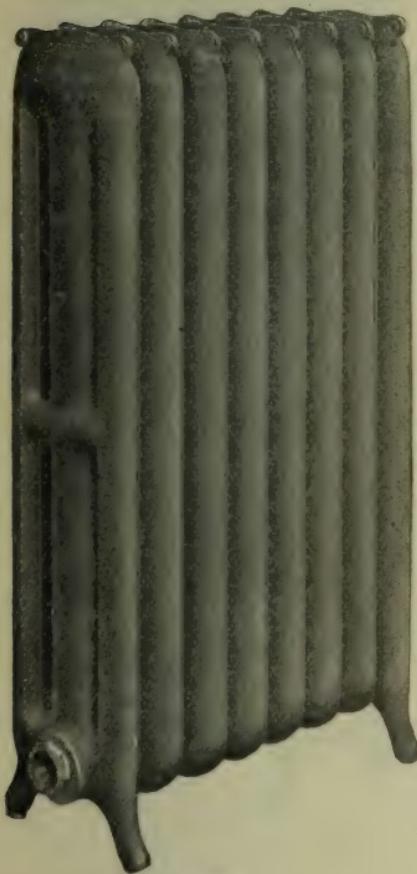
Connected at top and bottom with extra heavy slip nipples.

This pattern of Radiators is not made in any special or odd shapes, other than that same can be furnished with saddles for marble top.

*Except, Litchfield Rococo 3-Col. Water has R. & L. Nipples.

**ROCOCO
THREE-COLUMN PLAIN
RADIATORS**

For Steam and for Water



B3755

Dimensions. Radiating Surface, Tappings, and Prices same as for the Rococo Ornamental Three-Column B3752.

Connected with extra heavy right and left hand threaded nipples.

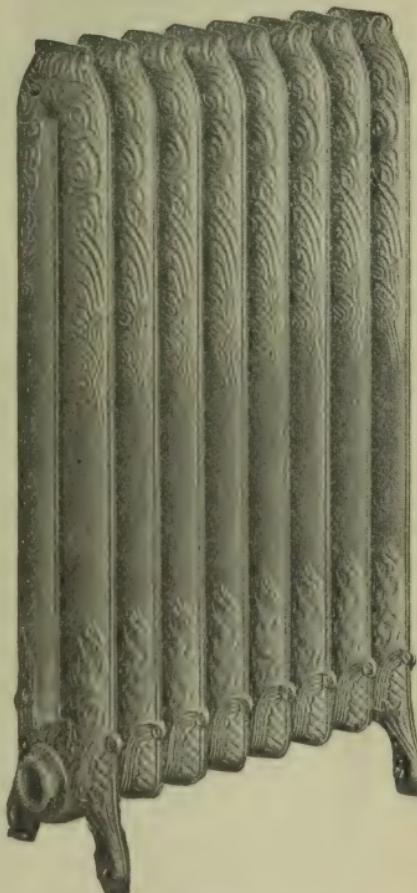
Rococo Plain Radiators are made in special shapes as follows: Circular, for Steam and Water; Corner, for Steam and Water; Curved for Steam and Water; Marble Top Lugs, for Steam and Water.

Perfection Radiators are made in special shapes as follows: Carpet Feet, Cast-iron Top, Circular, Curved, Corner, Dining-room, 38 in. height; Direct-Indirect, 38 and 26-in. heights; Legs, detachable high; Marble Top, with Lugs; Stairway, Window.

**PERFECTION TWO-
COLUMN RADIATORS**

For Steam

Made Ornamental or Plain
Ornamental



B3757

Each section is $7\frac{1}{4}$ inches wide. Width of legs $9\frac{1}{4}$ inches.

Height inch. 45 38 32 26 23 20
Rad. Surface per Section,

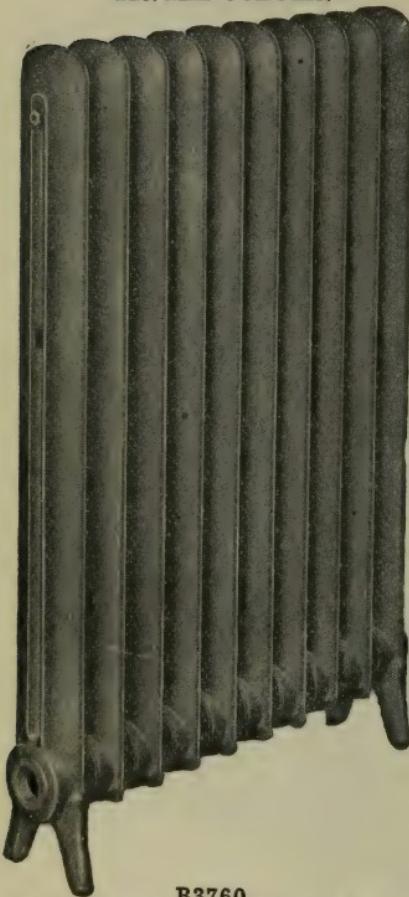
sq. ft. 5 4 $3\frac{1}{2}$ $2\frac{3}{4}$ $2\frac{1}{2}$ 2
Length of Radiator $2\frac{1}{2}$ inch per section. add $\frac{1}{2}$ inch for each bushing.

Tapped 2 inch and bushed per B3787.
Connected with extra heavy right and left hand threaded nipples.

PEERLESS RADIATORS

Plain

For Steam and for Water

SINGLE COLUMN**TWO COLUMN****B3760**

Each section is $4\frac{1}{2}$ inches wide.
Width of legs $5\frac{1}{2}$ inches.

Height, inches..... 38 32 26 23 20
Rad. surface, per sec-
tion, sq. ft. 3 $2\frac{1}{2}$ 2 $1\frac{1}{2}$ $1\frac{1}{2}$

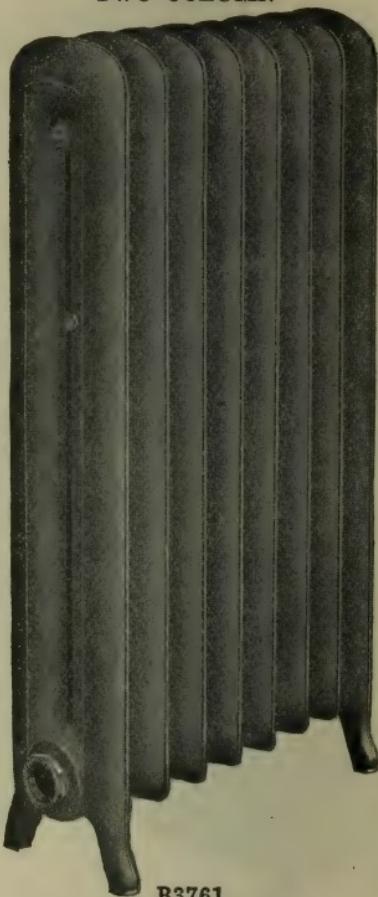
Length of Radiators, $2\frac{1}{2}$ in. per sec-
tion, and where bushed (see below) add
 $\frac{1}{2}$ in. for each bushing.

The Steam Radiators are tapped solid
as per table **B3787**, except with high legs
are tapped 2 in. and bushed. The Water
Radiators are tapped 2 in. and bushed.

Connected at top and bottom with extra heavy slip nipples for Water; and extra
heavy right-hand threaded nipples at bottom for Steam.

Peerless Single and Two-Column Radiators are made in special shapes as follows:

Circular, for Steam only; Concealed Bracket, for Steam and Water; Corner, for
Steam only; Curved, for Steam only; Legs, Extra High Solid, for Steam (Two Column
also for Water); Marble-Top, with Saddles for Steam and Water; Stairway, for Steam
only; Window, for Steam only.

**B3761**

Each section is $7\frac{1}{2}$ inches wide.
Width of legs $8\frac{1}{2}$ inches.

Height, inches 45 38 32 26 23 20 15
Rad. surface,
per section,
sq. ft. 5 4 $3\frac{1}{2}$ $2\frac{1}{2}$ $2\frac{1}{2}$ 2 $1\frac{1}{2}$

Length of Radiators $2\frac{1}{2}$ in. per sec-
tion, and add $\frac{1}{2}$ in. for each bushing.

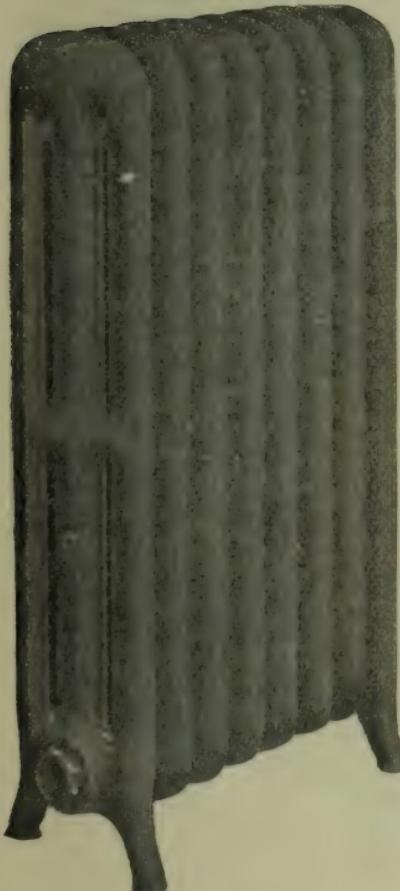
Tapped 2 in. and bushed per **B3787**.

PEERLESS RADIATORS

Plain

For Steam and for Water

THREE COLUMN



B3762

Each section is 9 inches wide.
Width of legs, 10 inches.

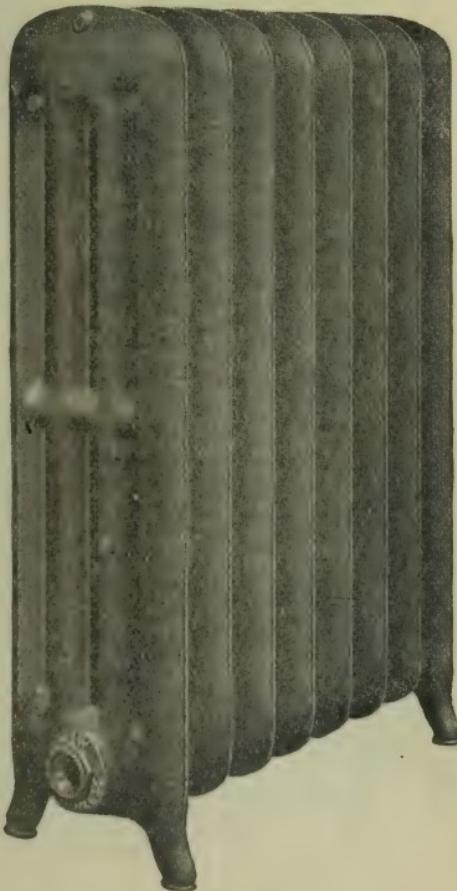
Height, in.....44 38 32 26 22 18
Heating surface
per section, sq.
ft..... 6 5 4½ 3¾ 3 2¼

Length of Radiators 2½ in. per section,
and add ½ in. for each bushing.

Tapped 2 in. and bushed per **B3787**.
Connected with extra heavy slip nipples.

Can be furnished with Saddles for
Marble Tops. Three Column can be furnish-
ed with Concealed Bracket.

FOUR COLUMN



B3763

Each section is 10½ inches wide.
Width of legs, 11¼ inches.

Height, in.....38 32 26 23 20
Heating surface
per section, sq.
ft..... 8 6½ 5¾ 4¾ 4

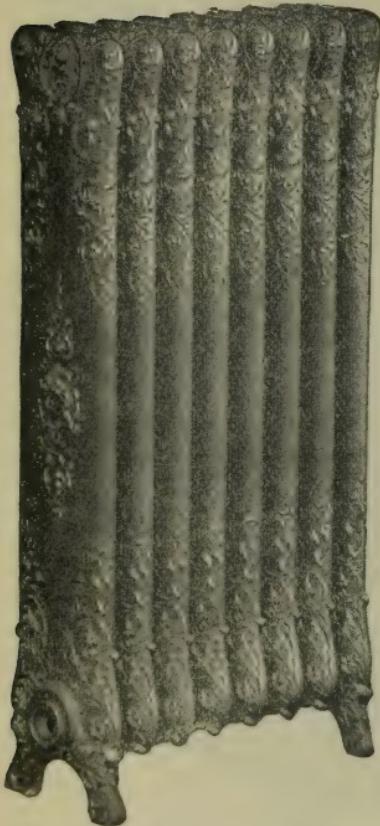
Length of Radiators, 2¾ in. per section,
and add ½ in. for each bushing.

Tapped 2 in. and bushed per **B3787**.

**VERONA STEAM AND
WATER RADIATOR**

Ornamental

Patented Nov. 3, 1896



B3770

Each section is 8 inches wide. Width of legs, 8½ inches.

Height, inch..... 38 33 26 20

Heating surface

per section, sq.

ft..... 4 3½ 2½ 2

Length of Radiators 2½ inch per section and add ½ inch for each bushing.

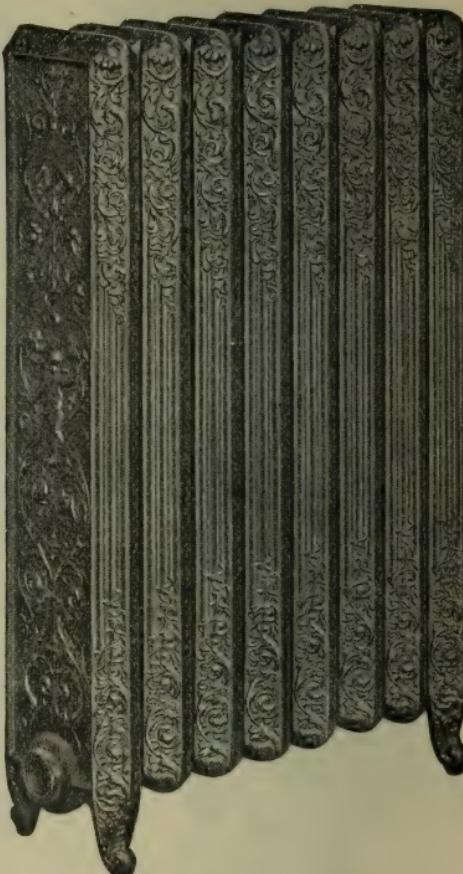
Tapped 2 inch and bushed per B3787.

Connected with extra heavy right and left hand threaded nipples.

Verona Radiators are made in special shapes as follows: Curved, for Steam and Water; Corner, for Steam and Water; Legs, Detachable High, for Steam and Water; Marble Top, with Lugs, for Steam and Water.

**ITALIAN
FLUE ORNAMENTAL
RADIATORS**

For Steam and Water



B3771

Patented October 20, 1896

Each section is 8½ inches wide. Width at legs 8½ inches.

Height, inch..... 38 32 26 20

Heating surface

per section,

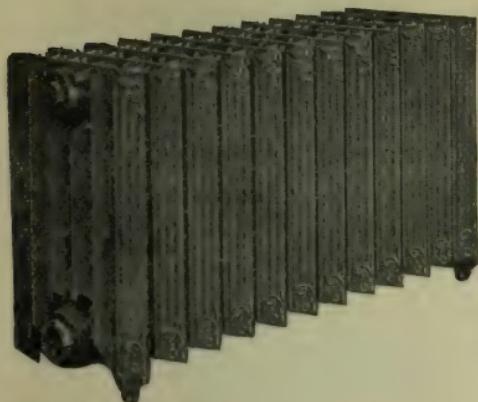
sq. ft..... 7 5½ 4½ 3½

Length of Radiator 3 inch per section and add ½ inch for each bushing.

Tapped 2 inch and bushed per B3787.

Connected with extra heavy right and left hand threaded nipples.

Italian Flue Radiators are made Corner for Steam and Water. Curved for Steam and Water. Legs, Detachable High, for Steam and Water; Marble Top, Lugs for Steam and Water.



AETNA FLUE WINDOW RADIATORS

For Steam or Water

B3772

Each section is 12½ inches wide,

| | | | | | |
|--|----|----|----|----|----|
| Height, inches..... | 20 | 18 | 16 | 14 | 13 |
| Heating surface, per section, sq. ft.... | 6 | 5½ | 4¾ | 4 | 3¾ |

Length of Radiators, 3 in. per section, and add ½ in. for each bushing.
Tapped 2 in. and bushed per **B3787**.

Connected with extra heavy right and left screw nipples.

Aetna Flue Radiators can be furnished **Curved** or **Corner**.

Distance from floor to center of tapping: Single-Pipe Steam, 2½ inches; double-Pipe Steam, 3 inches supply, 2½ inches return: Water, supply and return, 3 inches.

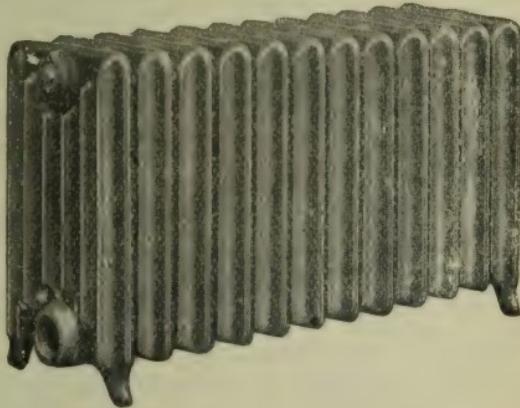
Top of each leg section has 1½-inch plug, which can be taken out to make top connection when desired.

ROCOCO WINDOW RADIATORS

For Steam or Water

B3775

Each section is 12½ inches wide.



| | | |
|--|----|----|
| Height, inches..... | 20 | 18 |
| Heating Surface, per section, sq. ft.. | 5 | 3 |

Length of Radiators, 3 in. per section, and add ½ in. for each bushing.
Tapped 2 in. and bushed as per **B3787**.

Floor to center of all tappings, 3 inches.

Steam Radiators tapped 1½ inch or smaller are fitted with eccentric bushings on supply end for single-pipe, and on return end for double-pipe; then, the distance from floor to center of 1½-inch tapping will be 2½ inches; 1¼-inch tapping, 2¾ inches; 1-inch tapping, 2½ inches; ¾-inch tapping 2½ inches.

As made at Detroit Plant these Radiators are connected with extra heavy right and left-hand threaded nipples. As made at Pierce Plant these Radiators are connected with slip nipples.

Top of each leg section has plug which can be taken out to make top connection when desired.

PRICE LIST AMERICAN DIRECT RADIATORS LIST B3780

Per Square Foot of Heating Surface. Subject to Change Without Notice
Showing Square Feet of Heating Surface to the Section

| Height..... | inches | 45 | 44 | 38 | 32 | 26 | 23 | 22 | 20 | 18 | 16 | 14 | 13 |
|--|-----------------|-----|-----------|-----|-----|------|------|------|------|------|------|------|------|
| Price..... | per square foot | .41 | 41 | .42 | .46 | .50 | .53 | .53 | .57 | .58 | .60 | .64 | .66 |
| Single-Column: | | | | | | | | | | | | | |
| Peerless and National, S. and W..... | | | | 3 | 2½ | 2 | 1½ | | | 1½ | | | |
| Rococo, Ornnmtl., S. & Water..... | | | | 3 | 2½ | 2 | 1¾ | | | 1½ | | | |
| Two-Column: | | | | | | | | | | | | | |
| Peerless, S. and W..... | 5 | | | 4 | 3½ | 2½ | 2½ | | | 2 | | | |
| Perfection, Ornnmtl. and Plain, S..... | 5 | | | 4 | 3½ | 2½ | 2½ | | | 2 | | | |
| Rococo, Ornamental, S. and W..... | 5 | | | 4 | 3½ | 2½ | 2½ | | | 2 | | | |
| Verona, S. and W..... | | | | 4 | 3½ | 2½ | 2½ | | | 2 | | | |
| National, S. and W..... | 5 | | | 4 | 3½ | 2½ | 2½ | | | 2 | | | |
| Three-Column: | | | | | | | | | | | | | |
| Peerless, S. or W..... | | 6 | 5 | 4½ | 3¾ | .... | 3 | .... | 2½ | .... | .... | .... | .... |
| Rococo, Ornnmtl and Plain, S. and W..... | | 6 | 5 | 4½ | 3¾ | .... | 3 | .... | 2½ | .... | .... | .... | .... |
| Four-Column | | | | | | | | | | | | | |
| Peerless, S. or W..... | | | 8 | 6½ | 5½ | 4½ | .... | 4 | .... | .... | .... | .... | .... |
| Rococo, Ornnmtl., S. or W..... | 10 | | 8 | 6½ | 5 | .... | 4 | .... | 3 | .... | .... | .... | .... |
| Flue and Window: | | | | | | | | | | | | | |
| Aetna Flue, S. or W..... | | | | | | | | | 6 | 5½ | 4½ | 4 | 3½ |
| Italian Flue, Ornnmtl., S. and W..... | | | | 7 | 5½ | 4½ | .... |  | 3½ | .... | .... | .... | .... |
| Rococo Window, S. or W..... | | | | | | | | | 5 | .... | .... | .... | 3 |

The locations of the figures in the above columns in line with the names of patterns of Radiators indicate the heights in which the various patterns are made. The figures themselves represent the amount of heating surface contained in each height section.

ROCOCO WALL RADIATORS

Per Square Foot

| | | |
|-------------------------------------|----------------------------------|-----|
| Extra large section, 9 square feet; | Standard section, 7 square feet; | |
| Small section, 5 square feet | | .42 |

..... .42

PRICE LIST OF AMERICAN INDIRECT RADIATORS

Per Section

| | | |
|--|--|------|
| Primus, water, 8 square feet..... | | 2.16 |
| Excelsior, steam and water, 12 square feet..... | | 3.24 |
| Excelsior Jr. steam, 8 square feet..... | | 2.16 |
| Perfection Pin, Standard Size, steam or water, 10 square feet..... | | 2.70 |
| Perfection Pin, Extra Large, steam or water, 15 square feet..... | | 4.05 |
| Cardinal, steam or water, 15 square feet..... | | 4.05 |
| Sterling, steam or water, 20 square feet..... | | 5.40 |
| Sanitary School Pin, steam or water, 20 square feet | | 5.40 |

Extra for assembling Indirect Radiators, 1c per ft. net.

EXTRA FOR SPECIALTIES. LIST B3785

Made at Detroit Plant, Pierce Plant, and Standard Plant

Add to Net Prices on following Direct Radiators; Rococo, Peerless, Perfection, National, Verona, Italian Flue, and Aetna Flue.

Steam

Water or Water Patterns

used for Steam

| | | | |
|---------------|------------------|---------------|------------------|
| Circular..... | per section, .58 | Circular..... | per section, .92 |
| Curved..... | " .58 | Curved..... | " .92 |
| Window..... | " .16 | Window..... | " .32 |
| Stairway..... | " .34 | Corner..... | per corner 4.75 |
| Corner..... | per corner 3.80 | | |

Perfection Radiator Tops (made at Detroit Plant). 15 cents per Section.

Carpet Feet Attachment (made at Detroit Plant), \$1.00 each.

Saddles, steam and water, for Pierce Plant Radiators (made at Pierce Plant), 50 cents per pair.

For Radiators with Legs Higher or Lower than regular, extra per leg section, all plants, 58 cents.

TAPPINGS DIRECT RADIATORS. LIST B3787

For Steam, One Pipe Work. Radiators containing 24 square feet and under, 1 inch; above 24 to 60 square feet, $1\frac{1}{4}$ inch; above 60 square feet to 100 square feet, $1\frac{1}{2}$ inch; above 100 square feet, 2 inch.

Two Pipe Work. 48 square feet and under, $1 \times \frac{3}{4}$ inch; above 48 square feet to 96 square feet, $1\frac{1}{4} \times 1$ inch; above 96 square feet, $1\frac{1}{2} \times 1\frac{1}{4}$ inch.

For Hot Water, Tapped for Supply and Return. Radiator containing 40 square feet and under, 1 inch; above 40 square feet to 72 square feet, $1\frac{1}{4}$ inch; above 72 square feet, $1\frac{1}{2}$ inch.

Regularly tapped at bottom, can be top and bottom, or top, or for steam, two tappings at bottom at one end.

Distance from Floor to Center of Tapping. List B3788

*Rococo. Single Column, Two Column and Three Column. Verona. Italian Flue.

*Peerless and National. Single Column and Two Column. Perfection.

All of above for water, $4\frac{1}{2}$ inches floor to center of tappings.

For steam, one pipe, 4 inches, and for two pipe flow $4\frac{1}{2}$ inch and return 4 inches.

*Rococo Four Column and Peerless Three and Four Column have all tappings for water or steam $4\frac{1}{2}$ inches floor to center.

*For Rococo Window and Aetna Flue, see information with illustrations.

CIRCULAR RADIATORS CORNER RADIATORS

For prices see extras, List B3785



B3790

Made in all heights as follows:

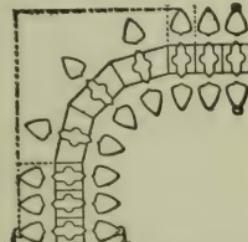
Peerless Single-Column (steam only),
Peerless Two-Column (steam only).

Perfection.

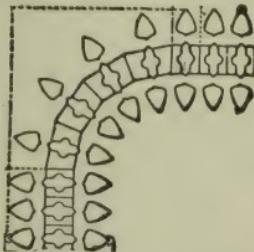
Rococo Three Column.

National Single and Two-Column (steam only).

Detroit Ornamental Fluted Wide-top (per illustration), 38-inch height only,



B3792—Diagrams showing Corner made of Three Sections.

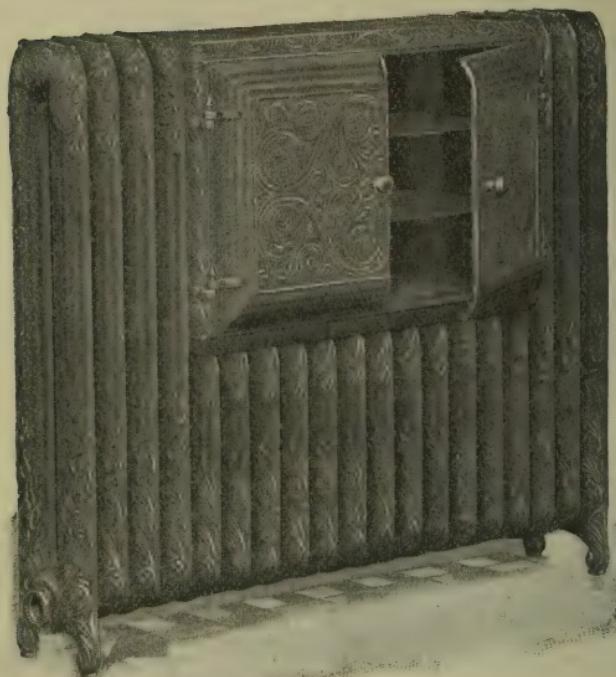


B3793—Showing Corner made of Four Sections.

When ordering Corner Radiators state how many sections are to be built into corner. State how many sections wanted in right wing also in left wing, when facing the inside of corner. Don't count the corner sections in the wings. State which is supply end and which the return end. Send pencil sketch.

DINING ROOM RADIATORS

DETROIT ORNAMENTAL FLUTED



(Illustration is of a Detroit Ornamental Fluted Radiator)

Oven has three shelves or racks, each $25\frac{1}{2}$ inches long, $12\frac{3}{8}$ inches wide, with $8\frac{1}{4}$ inches spaces between.

Outside or extreme depth of oven or closet is 13 inches, which fact should be borne in mind by fitters when arranging for connections, so that distance from wall to center of tapping shall not be less than $6\frac{1}{2}$ inches.

ROCOCO THREE-COLUMN, B3797

Steam and Water, 44 inches high

PERFECTION, B3798

Steam, 38 inches high

| Number | 00 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-------------------------|-------|-------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|
| Rococo, length in *.... | ..... | ..... | $22\frac{1}{2}$ | $27\frac{1}{2}$ | $32\frac{1}{2}$ | $37\frac{1}{2}$ | $42\frac{1}{2}$ | $47\frac{1}{2}$ | $52\frac{1}{2}$ | $57\frac{1}{2}$ |
| Heat'g surface, sq. ft. | ..... | ..... | $43\frac{1}{2}$ | $55\frac{1}{2}$ | $67\frac{1}{2}$ | $79\frac{1}{2}$ | $91\frac{1}{2}$ | $103\frac{1}{2}$ | $115\frac{1}{2}$ | $127\frac{1}{2}$ |
| Perfection, length in.* | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | .... |
| Heat'g surface, sq. ft. | 13 | 21 | 29 | 37 | 45 | 53 | 61 | 69 | 77 | .... |

*In estimating length allow $\frac{1}{2}$ inch for each bushing.

ROCOCO DINING ROOM RADIATORS

No. 1 is not made in Hot Water pattern.

These Radiators are tapped 2 inches and bushed as per list B3787.

Oven is about 10 inches high, has two shelves $17\frac{1}{4}$ inches long, $10\frac{1}{2}$ inches wide, with 5 inches space between.

The outside width of oven is 12 inches, and this fact should be borne in mind by fitters when arranging for connections, so that distance from center of tapping to wall shall not be less than 6 inches.

See next page for **Perfection Dining Room Radiators**; also Price List.

Made in 38-inch height only, Steam and Water.

B3796

| Number | *Length, inches | Heating Surface, square feet |
|--------|-----------------|------------------------------|
| 1 | $30\frac{1}{8}$ | $33\frac{1}{2}$ |
| 2 | $34\frac{1}{8}$ | 42 |
| 3 | $39\frac{5}{8}$ | $50\frac{1}{4}$ |
| 4 | $43\frac{1}{8}$ | $59\frac{1}{2}$ |
| 5 | $48\frac{1}{8}$ | 68 |
| 6 | $53\frac{3}{8}$ | $76\frac{3}{4}$ |
| 7 | $57\frac{1}{8}$ | $85\frac{1}{2}$ |
| 8 | $62\frac{1}{8}$ | 94 |
| 9 | $67\frac{1}{8}$ | $102\frac{3}{4}$ |
| 10 | $71\frac{1}{8}$ | $111\frac{1}{2}$ |

*Add $\frac{1}{2}$ inch for each bushing. Centre of tapping to floor same as two column Rococo B-3788.

Above Radiators are tapped 2 inches and bushed according to list B-3787.

DINING ROOM RADIATORS, (CONTINUED)**PERFECTION DINING ROOM RADIATORS**

Above Radiators are tapped 1½ inches and bushed as per list B3787.

In upper portion of oven are two shelves each 20¾ inches long, 13 inches wide, 9 inches space between. In lower portion one shelf of same measurement.

The outside width of oven is 13½ inches, and this fact should be borne in mind by fitters when arranging for connections, so that distance from center of tapping to wall shall not be less than 6½ inches.

Distance from floor to center of tapping, 4½ inches.

PRICE LIST OF DINING ROOM RADIATORS—Made at Detroit Plant

| Number | 00 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-------------------------------------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| Detroit, Steam, 38 in... | | | 42.00 | 46.00 | 50.00 | 54.00 | 58.00 | 62.00 | 66.00 | 70.00 |
| Detroit, Water, 38 in... | | | 48.00 | 52.50 | 57.00 | 61.50 | 66.00 | 70.50 | 75.00 | 79.50 |
| Perfection, Steamer Water, 38 in... | 38.00 | 43.00 | 48.00 | 53.00 | 58.00 | 63.00 | 68.00 | 73.00 | 78.00 | ..... |
| Rococo, Steam, 44 in... | | | 53.00 | 58.00 | 63.00 | 73.00 | 83.00 | 93.00 | 103.00 | 113.00 |
| Rococo, Water, 44 in... | | | 58.00 | 63.00 | 73.00 | 83.00 | 93.00 | 103.00 | 113.00 | 113.00 |

Nos. 9 and 10 quoted on application.

**BRACKET RADIATOR PEERLESS SIDE WALL
For Steam and Water RADIATORS**

For Steam and Water

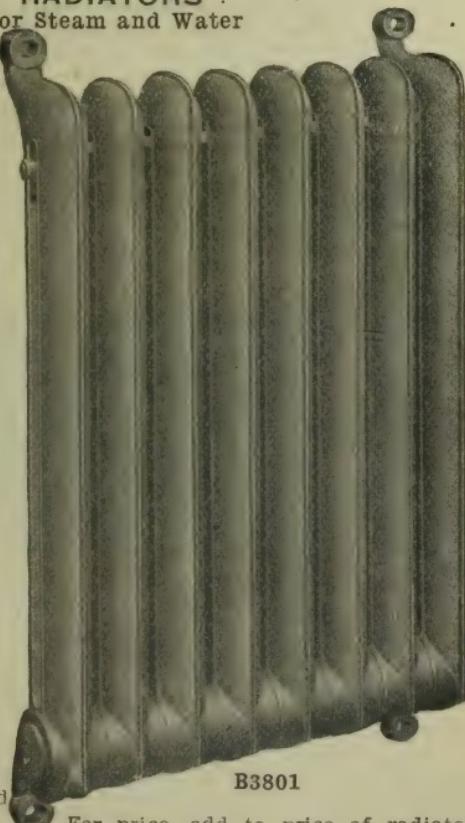


B3800

All AMERICAN Radiators can be fitted with these Brackets on special orders.

NOTE.—These are regular pattern radiators with the feet cut off.

For description of Brackets see B3806 and 3807



B3801

For price, add to price of radiator \$1.50 net for each end or leg section. Radiators over 20 sections should have an intermediate leg section.

Made in 38, 32, 26, 23 and 20 inch.

Wall to outer edge of bead 5½ inches. Tapped 2 in. bushed per B3787.

CURVED RADIATORS

Aetna Flue

**B3803**

For prices see extra list B3785

Curved Radiators are made in all heights of patterns as follows:

| | |
|---------------------------------------|---|
| Italian Flue. | Rococo Three-Col. Ornamental and Plain. |
| Peerless, Single-Column (steam only). | Verona. |
| Peerless, Two-Column (steam only). | National Single-Column (steam only). |
| Perfection. | National Two-Column (steam only). |

NOTE.—In ordering Curved or Corner Radiators, specify the exact radius or angle at the base-board within which the Radiator is to be placed.

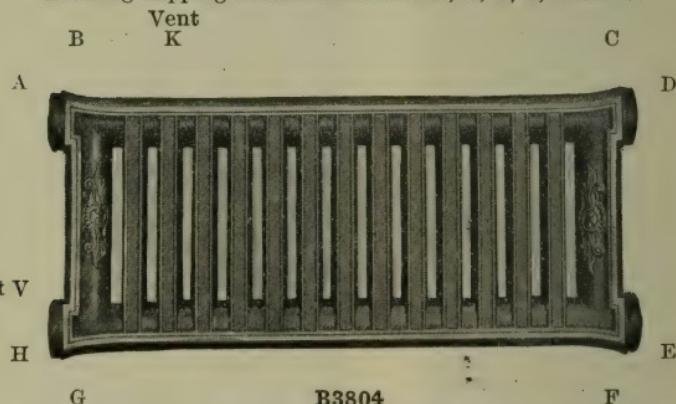
It is important that a heavy paper template showing exact size and radius of each curved radiator shall accompany the order and showing which is the flow or inlet end and which the return end.

AMERICAN WALL RADIATORS

For Steam or Water

ROCOCO PATTERN

Showing Tapping Bosses on short sides, A, D, E, H and V.

**B3804**

For prices see list B3780.

(Can be furnished tapped with bosses on the long sides same as B, C, G, F and K.)

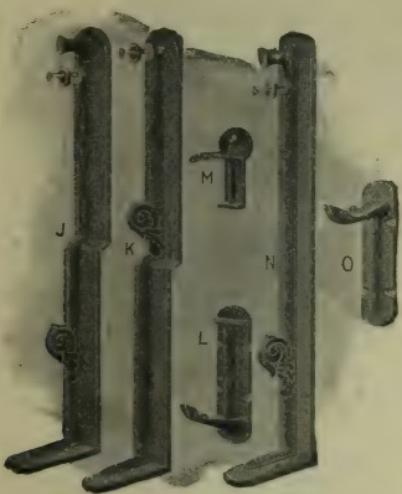
(Location of air vent boss determines location of letter indicating tapping hub.)

(See Some Possible Arrangements of Wall Radiators, B3808, BB3809.)

Wall Radiators are especially adapted for use on ships, in narrow halls, bathrooms, alcoves, or similar locations where a wide Radiator could not be employed. The extreme depth is only $2\frac{1}{8}$ inches (or $3\frac{1}{2}$ inches including bracket projection), so that it completely satisfies the architectural demand for a Radiator which can be fixed quite close to the wall. As the Radiator is supported by brackets fastened to the wall at any height, no floor space is occupied.

Rococo Wall Radiator sections are made for two methods of interconnection as follows: the vertical section is tapped on the long sides at B, C, G and F; the horizontal section is tapped on the short sides at A, H, D and E. A, B, C and H are right-hand tappings; D, E, F and G are left-hand tappings.

When more than four tappings are required in one section an extra charge is made for the extra tappings, at 10c each net.



BRACKETS

B3805—For Rococo Wall Radiators

Footed Vertical Brackets "J"

To fit over a $9\frac{1}{2}$ -inch high base-board or skirting, and for supporting Wall Radiators erected vertically. With each "J" Bracket we furnish one $\frac{1}{4}$ -inch stove bolt and one button which holds the Radiator in position.

Height from floor to center of supply or return end of lowest tapping:

| | | | |
|-----------------------|--------------------|-------|-----|
| No. J-1 Bracket | $9\frac{1}{2}$ in. | Each, | .40 |
| No. J-2 Bracket | $7\frac{1}{2}$ in. | " | .36 |
| No. J-3 Bracket | $5\frac{1}{2}$ in. | " | .30 |

Footed Horizontal Brackets "K"

To fit over base-board or skirting, and for supporting Wall Radiators erected horizontally.

With each "K" Bracket we furnish one $\frac{1}{4}$ -inch stove bolt and one button. Height from floor to center of supply or return end of lowest tapping:

| | | | |
|---|--------------------|-------|-----|
| No. K-1 Bracket will fit over $11\frac{1}{2}$ in. high base-board or skirting | 16 in. | Each, | .41 |
| No. K-2 Bracket " | $9\frac{1}{2}$ in. | " | .42 |
| No. K-3 Bracket " | $7\frac{1}{2}$ in. | " | .40 |
| No. K-4 Bracket " | $5\frac{1}{2}$ in. | " | .38 |
| No. K-5 Bracket " | $3\frac{1}{2}$ in. | " | .36 |
| No. K-6 Bracket " | $1\frac{1}{2}$ in. | " | .34 |

Bracket "L" or "O" each, \$0.10 Bracket "M" each, \$0.10

Bracket L. or O. screwed to wall, base-board or wainscoting, supports radiators set either horizontally or vertically. They are slotted for four wood screws—not furnished by us.

Bracket M. screwed to wall, base-board or wainscoting, and intended to be used as a guide or to hold in position radiator supported by Bracket "L" or "O." Each section requires for its proper support one "L" or "O" and one "M" Bracket. The "M" Bracket is slotted for two wood screws—not supplied by us.

Bracket "N." Price each, \$0.30

Is a straight right-angle Bracket without offset, for supporting Wall Radiators erected vertically or horizontally; height from floor to center of end tapping bosses, $5\frac{1}{2}$ inches. With each "N" Bracket we furnish one $\frac{1}{4}$ -inch stove bolt and one button.

Ceiling Bracket or Hanger "P." (Not illustrated) Price each, \$0.50

NOTE.—In ordering buttons and stove bolts separately from brackets, it is necessary to state for which bracket they are wanted, as different lengths of bolts are used for the different brackets.

CONCEALED BRACKETS—For Direct Radiators

See illustration B3800.



B3807—Top Guide

B3806—Bottom Support

Price Per Pair. (One Support and One Top Guide.) For Single-Column Radiators, \$0.80; Two-Col., \$1.50; Three-Col., \$1.80; Four-Col., \$2.00.

They are made for supporting Single, Two-Column, Three-Column, Four-Column Direct Radiators of all patterns of American Radiators. Distance from wall to center of tapping in radiator is—in the Single-Column, 3 inches; Two-Column, 5 inches; Three-Column, $5\frac{1}{2}$ inches; Four-Column, $6\frac{1}{2}$ inches. A set consists of one each top and bottom support as shown in illustration. Ordinarily two sets will support a medium size of radiator.

SHOWING SOME OF THE POSSIBLE ARRANGEMENTS OF WALL RADIATORS

B3803

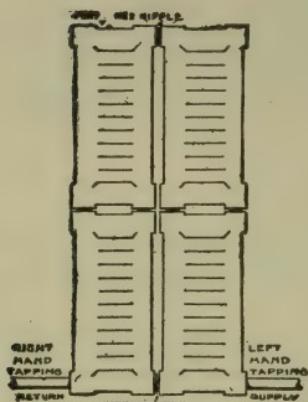


Fig. 19

Assembled Four Horizontal Sections in
Two Tiers Water.

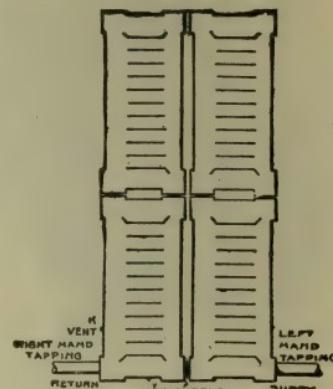


Fig. 20

Assembled Four Horizontal Sections in
Two Tiers One and Two-pipe Steam.

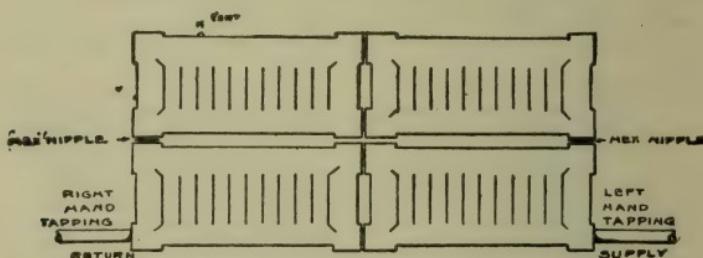


Fig. 21. Assembled Four Horizontal Sections in Two Tiers Water.

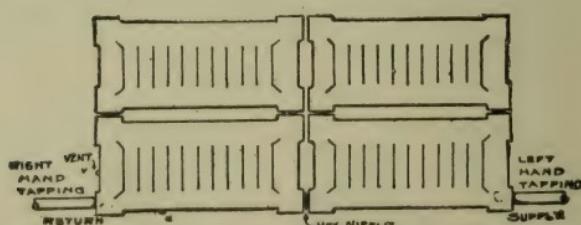


Fig. 22. Assembled Four Vertical Sections in Two Tiers One and Two-pipe steam.

American Wall Radiators are tapped $1\frac{1}{2}$ inches supply and return, and unless otherwise ordered, will be bushed according to regular tapping list B3787. Tappings other than those illustrated will be charged extra—10 cents each, net.

If radiators are to be assembled differently from any of the sketches shown on these pages please send pencil sketch with order, and be careful to show exact location of flow and return connections.

SHOWING SOME OF THE POSSIBLE ARRANGEMENTS OF WALL RADIATORS

B3809

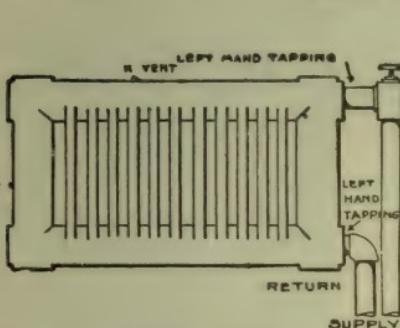


Fig. 9. Horizontal Water.

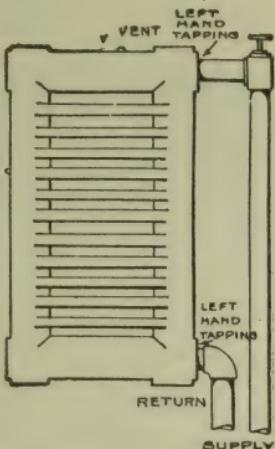


Fig. 10. Vertical Water.

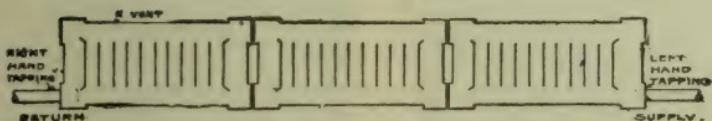


Fig. 11. Assembled Three Horizontal Sections in Single Tier Water.

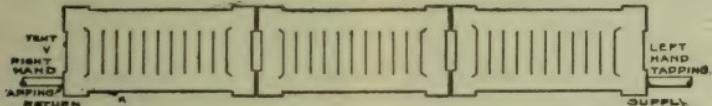


Fig. 12. Assembled Three Horizontal Sections in Single Tier One and Two-pipe Steam

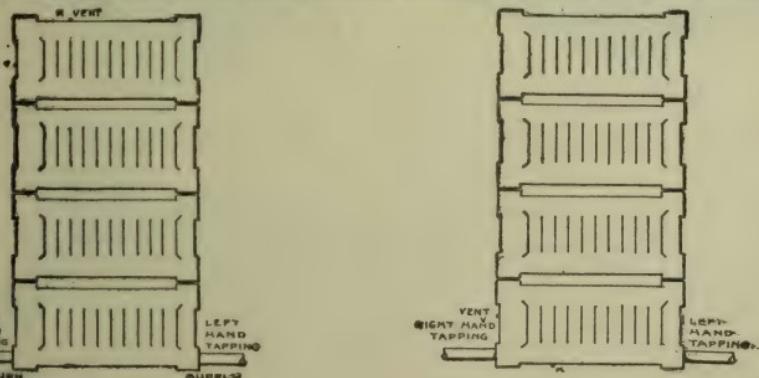


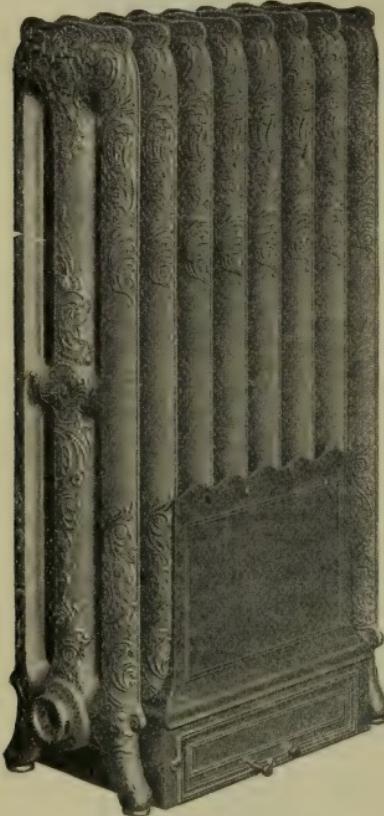
Fig. 15. Assembled Four Vertical Sections in Four Tiers Water.

Fig. 16. Assembled Four Vertical Sections in Four Tiers One and Two-pipe Steam.

If radiators are to be assembled differently from any of the sketches shown on these pages, please send pencil sketch with the order, and be careful to show exact location of flow and return connections.

VENTILATING RADIATORS

With New Adjustable Box-Base.
Front View—Rococo Three-Column
Orna. Radiator



B3812—(See B3820.)

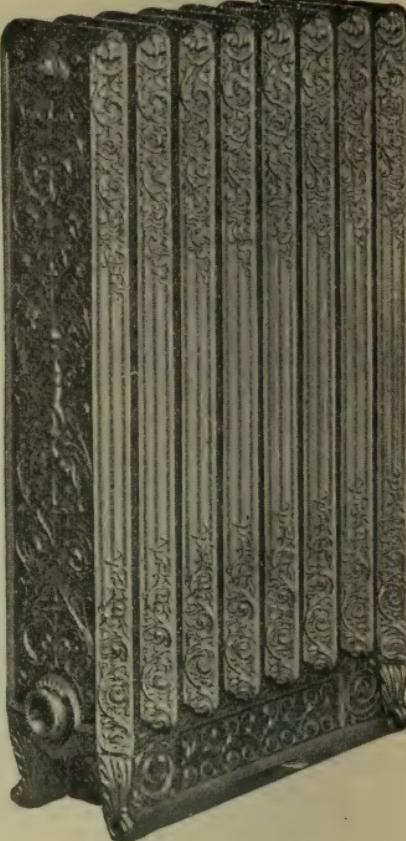
The Bases and plates are made for Rococo One, Two and Three-Column, Peerless One, Two and Three-Column; National One and Two-Column Radiators.

This improved Ventilating Base for American Radiators is made in portable form as illustrated in detail view shown B3820. This base is easily adjusted under stock Radiators as above without making any changes to the Radiator itself. The Bases and corresponding front and back plates are regularly made in eight sizes to supply air circulation to Radiators of from five to twelve sections of the Radiators named above. They fit under regular stock Radiators of more than five sections and with reference to amount of air supply required rather than full size of Radiator. Thus a 5-section Box-Base can be adjusted to a Radiator of 7, 9 sections or larger (in odd sections); a 10-section Box-Base fits a Radiator of 12 sections or larger (in even sections), and so on. A detailed view of Base appears B3820.

The two plates which are adjusted to the front and back of the Radiator on top of the Base are held in place by bolts running through the center or corners of the plates, which can be readily removed for cleaning.

ITALIAN ORNA. FLUE VENTILATING RADIATORS

For Steam and Water



B3813

Heights are $1\frac{1}{2}$ inch greater than listed B3771.

Each section is $8\frac{1}{4}$ inches wide.

Connected with extra-heavy right and lefthand threaded nipples.

This pattern of Radiator is not made in any special or odd shape, as the Box-Bases can only be made in straight form.

In ordering please state whether back or bottom inlet is required.

ITALIAN FLUE BOX-BASES



B3815

Showing Rear Half of Box-Base and Dampers.

Back Air-Inlet Closed.

(Patent applied for.)

*Outside measurements of flange or lip around back air-inlet of Box-Base, for attaching sheet-iron sleeve or pipe, are:



B3816

Box-Base, showing Operation of Dampers.

For Bottom Air-Inlet.

(Patent applied for.)

*Where air conduit is brought up through floor, under radiator, the opening in floor to be covered by dampers in Base should be:

NOTE.—12-Section Box-Base is to be used for radiator of twelve sections, or any **EVEN** number of sections larger. 11-Section Box-Base for radiator of eleven sections, or any **ODD** number of sections larger. Bottom of back air-inlet opening is one inch above floor level. In ordering Box-Bases to be placed in middle of long Radiators, note that, for instance, to cover six flues or middle sections requires an 8-section Base, to cover seven flues or middle sections requires 9-section Base, etc.

**FOR ROCOCO ONE, TWO, THREE AND FOUR-COLUMN
PEERLESS ONE, TWO AND THREE-COLUMN
AND NATIONAL TWO-COLUMN**

(See B3812)

With New Adjustable Box-Base. Front View—with Rear Wall Collar and Damper.



B3820

*Fits Radiator of

| | | | | | | |
|-------|------|------|------|------|------|-------|
| Sect. | 5 | 6 | 7 | 8 | 9 | 10 |
| Price | 5.00 | 6.00 | 7.00 | 8.00 | 9.00 | 10.00 |

*Fits Radiator of

| | | | | | |
|-------|-------|-------|-------|-------|-------|
| Sect. | 11 | 12 | 13 | 14 | 15 |
| Price | 11.00 | 12.00 | 13.00 | 14.00 | 15.00 |

*See number of sections adaptable to B3812.

The Base can be furnished with either an opening and damper in the back (as shown in above cut) or in the floor under the Radiator, as may be desired.

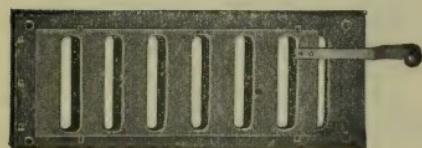
WALL BOXES



B3822

Price, each.....\$2.80

These are substantially constructed, and their angle slats and inside brass-wire screen render them storm and insect proof. Outside measurement of Wall Box is 5x17½ inches to conform with brick measure. The outside measurement of the flange is 4¾x17 inches.



FLOOR DAMPERS

B3824

For Perfection and Rococo Direct-
Indirect Radiators

Quoted on application. State size of
radiators, etc.

SADDLES FOR MARBLE TOPS

For Steam Radiators, also for Hot-Water Radiators.

For Peerless Single-Column. Two-Column. Three-Column. Four-Column.
Rococo Ornamental. National Single-Column and National Two-Column.

They afford a rest or support upon which marble tops can be placed. Two of these Saddles are usually sufficient for a radiator, but in the case of a radiator of 15 sections or more it is advisable to use three saddles—one in the center and one at either end.

We are also prepared to furnish cast iron Saddles for Zenith Window Flue Radiators.

LUGS FOR MARBLE TOPS

The following patterns are, when so specially ordered, arranged with lugs on top of leg sections for holding marble tops; Italian Flue, Perfection, Verona, Rococo (Detroit Plant).



PEDESTALS

Made at Pierce Plant

Pedestals to fit under legs of all styles and heights of any of our Direct Radiators can be furnished in the following heights: ½, ¾, 1, 1¼, 1½, 1¾, 2, 2¼, 2½, 3, 3½, 4, 4½, 5, 6, 7, 8 and 9 inches.

Made at Detroit Plant

Pedestals to fit under legs of all styles and heights of any of our Direct Radiators can be furnished in the following heights: ½, ¾, 1, 1¼, 1½, 1¾, 2, 2¼, 2½, 3, 3½, 4, 4½, 5, 5½, 6, 6½, 7, 7½, 8, 8½, and 9 inches.

B3829

Price Each

| | | | |
|----------------------------------|-----|----------------------------------|-----|
| ½, ¾ and 1 inch Pedestals..... | .10 | 4 and 4½ inch Pedestals..... | .30 |
| 1½ inch Pedestals..... | .12 | 5 and 5½ inch Pedestals..... | .32 |
| 1½ and 1¾ inch Pedestals..... | .14 | 6 and 6½ inch Pedestals | .36 |
| 2, 2¼, and 2½ inch Pedestals.... | .20 | 7 and 7½ inch Pedestals..... | .40 |
| 3 and 3½ inch Pedestals..... | .24 | 8, 8½, and 9 inch Pedestals..... | .44 |



B3830
Extra High Solid Legs
See List B3785

EXTRA HIGH SOLID LEGS

Extra High Solid Legs as shown by illustration on this page can be furnished, on special order only, in all heights of

National One and Two Column
Peerless . . . One, Two, Three, and Four Column
Rococo . . . One, Two, Three, and Four Column
Zenith Zenith Window

so that distance from floor to center of tapping will be 5, $5\frac{1}{2}$, 6, $6\frac{1}{2}$, 7, $7\frac{1}{2}$, or 8 inches, as ordered.

These Radiators with Extra High Solid Legs are tapped 2 inches and bushed according to list B3787.

NOTE: In ordering Radiators having extra high solid legs, always give distance required from floor to the center of what is to be the supply tapping of Radiator; and when for Steam, be sure to state whether for one or two-pipe work.



B3832
Detachable High Legs
See List B3785

DETACHABLE HIGH LEGS

(Patent applied for)

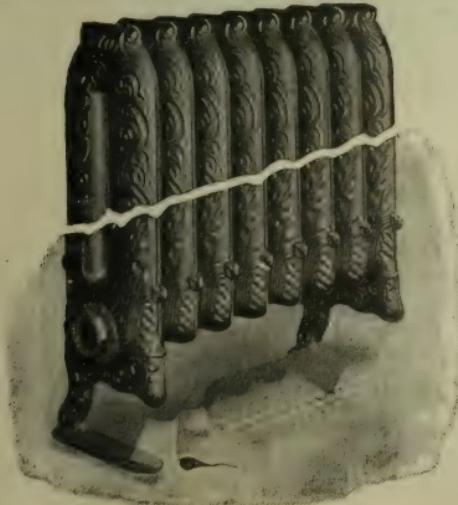
Are made, on special order, for all heights of Italian Flue (without Box Bases), Verona, Perfection, Rococo Ornamental and Plain Radiators, and Rococo Window Radiators.

These legs can be furnished in any height desired, so that center of supply tapping for one-pipe job will be $4\frac{1}{2}$, 5, $5\frac{1}{2}$, 6, $6\frac{1}{2}$, 7, $7\frac{1}{2}$, 8, or $8\frac{1}{2}$ inches from floor.

The Etna Flue Radiators can also be furnished with Detachable High Legs, to make distance from floor to center of supply tapping on one-pipe job, 3, $3\frac{1}{2}$, 4, $4\frac{1}{2}$, 5, $5\frac{1}{2}$, 6, $6\frac{1}{2}$, 7, $7\frac{1}{2}$, 8, $8\frac{1}{2}$, or 9 inches.

These legs are detached and shipped separately, thus removing possibility of breakage.

In ordering Radiators having Detachable Legs, always give distance from floor to center of what is to be the supply tapping of radiator; and when for Steam Radiators, be sure to state whether for one or two-pipe job.

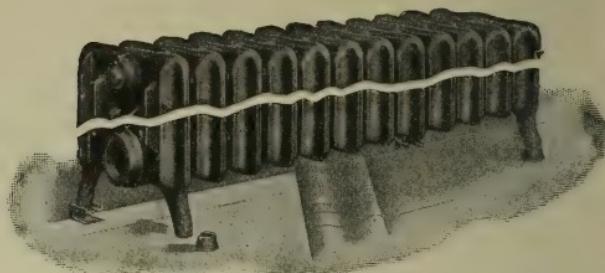


CARPET-FEET RADIATORS

Furnished for all heights of Perfection Steam Radiators. Carpet feet increase distance from floor to center of supply tapping to $6\frac{1}{2}$ inches for single-pipe Steam; supply 7 inches, return $6\frac{1}{2}$ inches, for double-pipe Steam; 7 inches, either supply or return, for Water.

Also furnished for all heights of Detroit Plant Rococo Three-Column Radiators for Steam and Water; distance from floor to center of single-pipe Steam tapping, 5 inches; for two-pipe Steam, $5\frac{1}{2}$ inches supply, 5 inches return; for Water, $5\frac{1}{2}$ inches, either supply or return.

B3836
See Price List B3785

RADIATOR "FOOT-UPS"

B3840

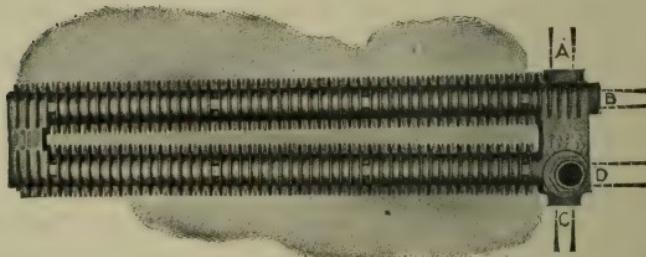
Showing its application to a low Radiator of the National Four Column pattern, and illustrating the method of taking up a carpet without changing anything but one of the Foot-ups at a time. The advantages of these little conveniences are as follows: Very neat in appearance; easily adjusted; save time and money; do away with radiator boards; save cutting carpet or displacing the radiator to take up the carpet. These Foot-ups set the radiator up from floor $1\frac{1}{2}$ inches.

Per set of two pieces:

| | | |
|--------------------|-------|-----|
| Plain..... | ..... | .25 |
| Nickel plated..... | ..... | .40 |

EXCELSIOR INDIRECT RADIATORS

For Steam and Water



B3842

See Price List B3780

Excelsior Indirect Steam Section—Showing Special Tappings

Length of Excelsior Indirect Steam Section, 36 inches. Excelsior Indirect Hot-Water Section, $36\frac{1}{4}$ inches. Height, 8 inches.

Width occupied in stack, $3\frac{1}{4}$ inches; or, when specially ordered connected with extra long nipples, to give additional air area between sections, $3\frac{1}{4}$, $3\frac{1}{2}$, $4\frac{1}{4}$, and $4\frac{3}{4}$ inches. Each section contains 12 square feet of heating surface in both Steam and Hot Water. Sections are shipped separately unless otherwise ordered; when ordered assembled are shipped in stacks of 5 or 6 sections.

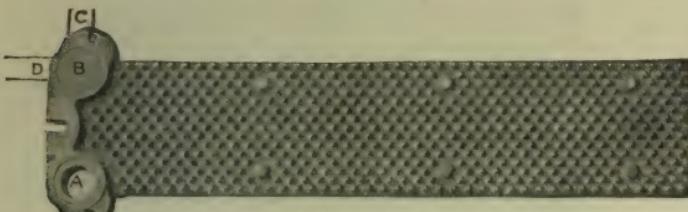
Connected with extra heavy $1\frac{1}{2}$ -inch right and left-hand threaded nipples, having hexagon nut at the center.

Regular tapping is $1\frac{1}{4}$ -inch; supply tapping has right-hand thread; return tapping, left-hand thread.

If location of tapping is desired other than regular, we can furnish special tappings as shown above: "A," $1\frac{1}{2}$ -inch tapping or smaller; "B," $1\frac{1}{4}$ -inch tapping or smaller; "C," $1\frac{1}{4}$ -inch tapping or smaller; "D," $1\frac{1}{4}$ -inch tapping or smaller.

PERFECTION PIN INDIRECT RADIATORS

For Steam and Water



Standard Section—B3844

10 square feet of heating surface to the section, with flange and bolt connections. See price list B3780. Length, 36 $\frac{1}{4}$ inch; height, 7 $\frac{1}{2}$ inch; at connections, 11 $\frac{1}{2}$ inch. Width occupied in stack, 2 $\frac{3}{4}$ inch, can be increased to 3 inch by making with extra heavy bosses.

"Extra Large" Sections—B3846

15 square feet of heating surface to the section. With flange and bolt connections. See price list B3780. Length, 36 $\frac{1}{4}$ inch; height, 11 $\frac{1}{2}$ inch; at connections, 15 $\frac{1}{2}$ inch. Width occupies in stack, 2 $\frac{3}{8}$ inch, or can make with extra heavy bosses adding $\frac{1}{4}$ inch or $\frac{1}{2}$ inch to space.

Both "Standard" and "Extra Large" sizes are tapped 2 inches, and unless otherwise ordered will be bushed according to list B3787.

All openings will have right-hand threads unless otherwise ordered.

If location of tappings is desired other than regular, as shown by "A" in cut, we can furnish special tappings at "B," 2 inches or smaller; "C," 1 $\frac{1}{4}$ inches or smaller; "D," 1 $\frac{1}{4}$ inches or smaller. Can also furnish same special tappings at reverse end of stack if desired.

Length, 36 $\frac{1}{4}$ inches. Height, 7 $\frac{1}{2}$ inches. Height at connecting point, 11 $\frac{1}{2}$ inches. Width each section occupies in stack, 2 $\frac{3}{4}$ inches, or when specially ordered, this can be increased $\frac{1}{4}$ inch, to give additional air area between sections, by furnishing sections with heavy bosses.



With Right and Left-Hand Threaded Hexagon Center Nipples.

See Price List B3780

B3848

These threaded nipple sections are same sizes as the flange sections, viz: 10 and 15-foot. Length, height and thickness in stack is the same as B3844 and B3846, but height at connecting point is 9 $\frac{1}{2}$ inches for the Standard size, and 14 inches for the Extra Large size. The width each section occupies in stack can be increased $\frac{1}{4}$ inch, $\frac{1}{2}$ inch, $\frac{3}{8}$ inch, or 1 inch by using special nipples.

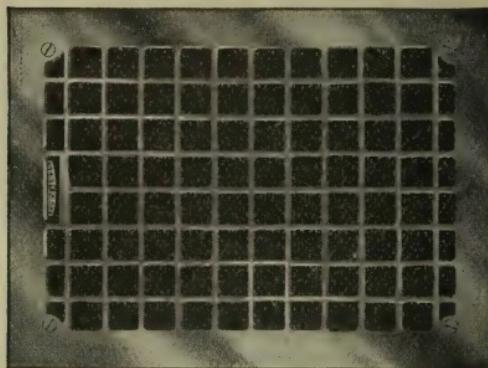
Sections are shipped separately unless otherwise ordered; when ordered assembled are shipped in stacks of 5 or 6 sections.

"Standard" and "Extra Large" sizes are tapped 2-inch, and unless otherwise ordered, will be bushed in accordance with list B3787.

Openings will have 2-inch right-hand tapping on one side and 2-inch left-hand tappings on the other. Connected with extra heavy 2-inch right and left-hand threaded hexagon nipples. When tappings are bushed to smaller sizes, the inside tappings in bushings will be right-hand unless otherwise ordered.

If location of tapping is desired other than regular, we can furnish these radiators, when specially ordered, in the "Extra Large" size with special tappings at "A," "B," "C" and "D," 2 inches or smaller; the "Standard" size can be tapped 2 inches or smaller at "A" and "B," and 1 $\frac{1}{4}$ inch or smaller at "C" and "D." These indirects can also be furnished with same special tappings at reverse end of stack, if desired.

REGISTERS



B3860

| Black Japanned | | | | Nickel Plated, Also Bronzed, Gold, Silver Copper and Bronzed Finish | | | Electro Plated, Brass Bronze or Copper | | |
|------------------------|-----------------------|--------------------------|-------------------------|--|--------------------------|-------------------------|---|--------------------------|-------------------------|
| Open- ing Inches | Regis- ter Each | Register Face Each | Floor Border Each | Reg'er Face Each | Register Face Each | Floor Border Each | Regis- ter Each | Register Face Each | Floor Border Each |
| 8×8 | 1.60 | 1.05 | 1.20 | 3.00 | 2.45 | 2.60 | 3.70 | 3.15 | 3.65 |
| ×10 | 1.65 | 1.10 | 1.25 | 3.15 | 2.60 | 2.75 | 3.85 | 3.30 | 3.90 |
| ×12 | 1.90 | 1.30 | 1.50 | 3.65 | 3.05 | 3.25 | 4.40 | 3.75 | 4.40 |
| 9×12 | 2.10 | 1.45 | 1.65 | 4.00 | 3.35 | 3.55 | 5.10 | 4.45 | 5.00 |
| 10×12 | 2.40 | 1.70 | 1.75 | 4.40 | 3.70 | 3.75 | 5.50 | 4.80 | 5.35 |
| ×14 | 3.15 | 2.20 | 2.20 | 5.25 | 4.30 | 4.30 | 6.55 | 5.60 | 6.00 |
| ×16 | 4.85 | 2.95 | 2.95 | 7.20 | 5.30 | 5.30 | 8.60 | 6.70 | 7.20 |
| ×18 | 6.70 | 3.70 | 3.70 | 9.45 | 6.45 | 6.45 | 11.00 | 8.00 | 8.55 |
| ×20 | 8.90 | 4.35 | 4.35 | 12.00 | 7.50 | 7.50 | 13.80 | 9.30 | 9.80 |
| ×22 | 10.40 | 4.90 | 4.90 | 14.50 | 9.00 | 9.00 | 16.50 | 11.00 | 11.00 |
| 12×15 | 4.50 | 2.90 | 2.90 | 7.00 | 5.40 | 5.40 | 8.50 | 6.90 | 7.60 |
| ×16 | 5.60 | 3.50 | 3.50 | 8.25 | 6.15 | 6.15 | 9.75 | 7.65 | 8.25 |
| ×18 | 6.80 | 3.90 | 3.90 | 9.55 | 6.65 | 6.65 | 11.25 | 8.35 | 9.00 |
| ×24 | 12.25 | 5.50 | 5.50 | 16.30 | 9.55 | 9.55 | 18.60 | 12.10 | 12.35 |
| 14×18 | 9.00 | 4.50 | 4.50 | 12.00 | 7.50 | 7.50 | 18.50 | 12.00 | 12.15 |
| ×20 | 9.50 | 4.80 | 4.80 | 13.00 | 8.50 | 8.50 | 20.50 | 13.00 | 12.75 |
| ×22 | 10.50 | 5.00 | 5.00 | 14.50 | 9.00 | 9.00 | 22.50 | 14.50 | 13.50 |
| 16×20 | 12.35 | 6.10 | 6.10 | 16.55 | 10.30 | 10.30 | 24.60 | 16.00 | 14.00 |
| ×22 | 14.75 | 6.70 | 6.70 | 19.50 | 11.50 | 11.50 | 28.00 | 18.00 | 16.00 |
| ×24 | 15.00 | 7.00 | 7.00 | 20.00 | 12.00 | 12.00 | 29.60 | 19.25 | 17.10 |
| ×28 | 24.60 | 10.00 | 10.00 | 30.80 | 16.20 | 16.20 | 35.00 | 22.75 | 18.80 |
| ×30 | 27.90 | 11.00 | 11.00 | 35.00 | 18.25 | 18.25 | 37.50 | 25.00 | 21.60 |
| ×32 | 31.00 | 13.10 | 13.10 | 38.25 | 20.35 | 20.35 | 42.00 | 27.50 | 22.00 |
| ×36 | 36.00 | 16.00 | 16.00 | 45.00 | 25.00 | 25.00 | 50.00 | 33.00 | 27.00 |
| 18×18 | 18.50 | 7.20 | 7.20 | 23.75 | 12.45 | 12.45 | ..... | ..... | ..... |
| ×21 | 20.50 | 7.75 | 7.75 | 26.00 | 13.25 | 13.25 | ..... | ..... | ..... |
| ×24 | 21.50 | 8.35 | 8.35 | 27.75 | 14.60 | 14.60 | ..... | ..... | ..... |
| ×27 | 27.50 | 10.75 | 10.75 | 35.00 | 18.25 | 18.25 | ..... | ..... | ..... |
| ×30 | 31.25 | 13.25 | 13.25 | 38.00 | 21.00 | 21.00 | ..... | ..... | ..... |
| ×36 | 38.00 | 17.25 | 17.25 | 48.50 | 28.10 | 26.00 | ..... | ..... | ..... |

Other sizes quoted on application.

ANGLE RADIATOR VALVES (STEAM)



B3900

UNION VALVES WITH WOOD WHEEL AND JENKINS DISC

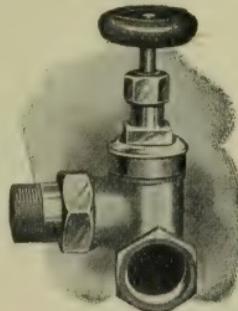
| Size..... | inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|---------------------------------|--------|---------------|---------------|------|----------------|----------------|---|
| Rough body, plated all over.. | 3.20 | 3.80 | 4.75 | 6.40 | 8.10 | 13.10 | |
| Rough body, plated trimmings | 3.00 | 3.75 | 4.65 | 6.25 | 8.00 | 12.85 | |
| Rough body, finished trimmings | 2.75 | 3.50 | 4.30 | 5.85 | 7.75 | 12.60 | |
| Finished body..... | 3.20 | 4.00 | 4.80 | 6.40 | 8.75 | 13.85 | |
| Finished body, plated all over. | 3.25 | 4.25 | 5.25 | 7.00 | 9.25 | 14.35 | |

For Loose Key Valves use same list. Valves without Unions quoted on application.
Valves with Brass Discs quoted on application.

**CORNER
RADIATOR VALVES
(STEAM)**



B3901
Right-Hand Valve
Threaded-Right-Hand on Union
Right-Hand on Bottom

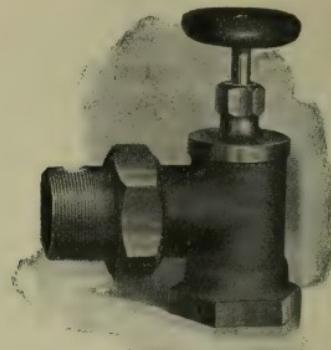


B3902
Left-Hand Valve
Threaded-Right-Hand on Union
Right-Hand on Bottom

UNION VALVES WITH WOOD WHEEL AND JENKINS DISC

| Size..... | Inches | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|-------------------------------------|--------|---------------|------|----------------|----------------|---|
| Rough body, plated all over,..... | 4.20 | 5.25 | 7.05 | 8.95 | 14.45 | |
| Rough body, plated trimmings..... | 4.15 | 5.15 | 6.90 | 8.80 | 14.15 | |
| Rough body, finished trimmings..... | 3.85 | 4.75 | 6.45 | 8.55 | 13.85 | |
| Finished body, plated all over..... | 4.85 | 6.00 | 7.80 | 9.95 | 15.95 | |

For Loose Key Valves use same list. Valves without Unions quoted on application.
Valves with Brass Discs quoted on application.

HOT WATER RADIATOR VALVES**QUICK OPENING**

B3903

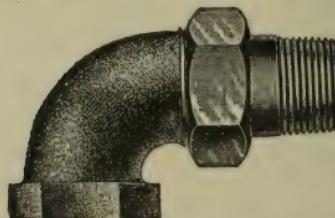
UNION VALVES WITH WOOD WHEEL

| Sizes | inches | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|----------------------------------|--------|---------------|------|----------------|----------------|-------|
| Rough Body, plated all over... | each | 2.85 | 3.65 | 5.05 | 7.10 | 10.85 |
| Rough Body, plated trimmings. | " | 2.60 | 3.35 | 4.90 | 6.65 | 10.25 |
| Rough Body,finished trimmings. | " | 2.45 | 3.25 | 4.50 | 6.50 | 10.00 |
| Finished Body..... | " | 3.00 | 3.85 | 5.25 | 7.50 | 11.50 |
| Finished Body, plated all over.. | " | 3.40 | 4.30 | 5.80 | 8.10 | 12.35 |

Valves without Wheel for Key quoted on application.

Valves without Union quoted on application.

Straight Valves can be furnished from factory at special price..

BRASS UNION ELBOWS**FOR HOT WATER RADIATORS**

B3904

| Size..... | inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|----------------------------------|--------|---------------|---------------|------|----------------|----------------|------|
| Rough Body, plated all over... | each | 1.75 | 2.00 | 2.50 | 3.20 | 4.00 | 7.00 |
| Rough Body, plated trimmings. | " | 1.65 | 1.90 | 2.40 | 3.10 | 3.85 | 6.15 |
| Rough Body,finished trimmings. | " | 1.50 | 1.75 | 2.25 | 2.95 | 3.70 | 6.00 |
| Finished all over..... | " | ... | 2.20 | 2.75 | 3.60 | 4.60 | 7.50 |
| Finished and plated all over.... | " | 2.25 | 2.40 | 3.00 | 3.90 | 4.85 | 8.50 |

**JENKINS BROS.
ANGLE RADIATOR VALVES
STEAM**

B3910 WITH WOOD WHEEL AND UNION

| Size.....inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|----------------------------------|---------------|---------------|-------------|----------------|----------------|--------------|
| Rough Body, Plated all over..... | 3.15 | 3.90 | 4.70 | 6.25 | 8.15 | 13.00 |
| Plated trimmings..... | 3.05 | 3.80 | 4.60 | 6.15 | 8.05 | 12.90 |
| Finished trimmings..... | 2.75 | 3.50 | 4.30 | 5.85 | 7.75 | 12.60 |
| Finished all over | 3.20 | 4.00 | 4.80 | 6.40 | 8.75 | 13.85 |
| Finished and Plated..... | 3.60 | 4.40 | 5.20 | 6.80 | 9.15 | 14.25 |



For Loose Key Valves use same list.
Valves without Unions quoted on application.

Can be furnished with female unions if desired.

**JENKINS BROS.
CORNER RADIATOR
VALVES**

STEAM

B 3912 is Left Hand Offset Pattern

B 3913 is Right Hand Offset Pattern

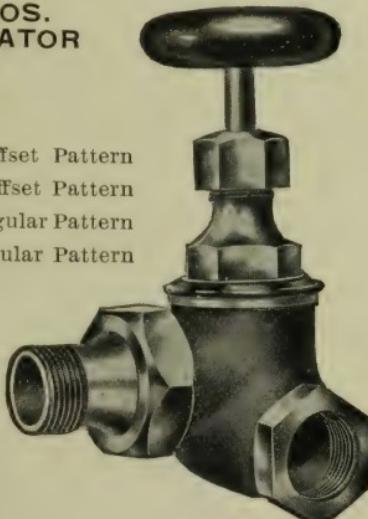
B 3914 is Right Hand Regular Pattern

B 3915 is Left Hand Regular Pattern



Right Hand Corner
Regular Valve

For One Pipe Jobs we recommend the Offset Pattern Valves.



Left Hand Corner
Offset Valve

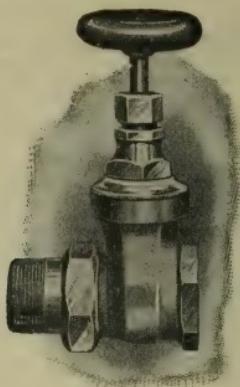
**GENUINE JENKINS VALVES WITH WOOD WHEEL
AND UNION**

| Size.....inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|--|---------------|---------------|-------------|----------------|----------------|--------------|
| Rough body, plated all over | 3.45 | 4.25 | 5.15 | 6.95 | 8.95 | 14.25 |
| Rough body, plated trimmings..... | 3.35 | 4.15 | 5.05 | 6.85 | 8.85 | 14.15 |
| Rough body, finished trimmings.... | 3.05 | 3.85 | 4.75 | 6.45 | 8.55 | 13.85 |
| Finished all over..... | 3.50 | 4.40 | 5.30 | 7.05 | 9.65 | 15.25 |
| Finished and plated all over..... | 3.90 | 4.80 | 5.70 | 7.45 | 10.05 | 15.65 |

For Loose Key Valves use same list.
Valves without Unions quoted on application.

UNION BRASS GATE VALVE

Wood Wheel. Water or Steam



B 3916

| Size..... | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
|---|---------------|---------------|------|----------------|----------------|-------|
| Rough Body, Nickel Plated all over, each..... | 3.10 | 3.75 | 4.65 | 6.10 | 7.85 | 12.10 |
| Rough Body, Finished Trimmings, each..... | 2.75 | 3.35 | 4.20 | 5.50 | 7.25 | 11.35 |
| Price without Union | | | | | | |
| Rough Body, Nickel Plated all over, each..... | 2.00 | 2.60 | 3.45 | 4.70 | 6.35 | 9.80 |
| Rough Body, Finished Trimmings, each..... | 1.70 | 2.25 | 3.05 | 4.25 | 5.85 | 9.05 |
| Finished all over, each..... | 2.65 | 3.25 | 4.50 | 6.00 | 7.50 | 12.00 |
| Finished and Plated all over, each... | 2.95 | 3.60 | 4.90 | 6.45 | 8.00 | 12.75 |

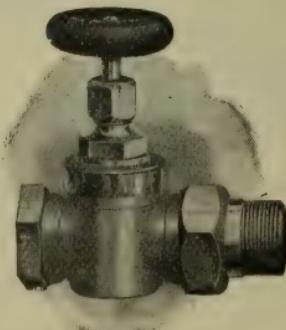
SPECIAL UNION RADIATOR VALVES

Radiator Globe Valve



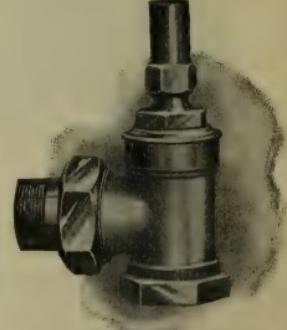
B 3918

Straight Hot Water Valve



B 3919

Radiator Key Valve



B 3920

Jenkins Disc Valves, use list B3900.

Genuine Jenkins Valves, use list B 3910.

Hot Water Valves, use list B3903.

Valves Without Union quoted on application.

UNIQUE WATER RADIATOR VALVE



B 3922

| Sizes, inches..... | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ |
|--|------------------|------------------|-------------------|-------------------|
| Center of body to end of spud..... | $2\frac{3}{8}''$ | $2\frac{7}{8}''$ | $3\frac{1}{16}''$ | $3\frac{5}{16}''$ |
| Inside dimensions of couplings to radiators..... | $1\frac{1}{4}''$ | $1\frac{1}{4}''$ | $1\frac{1}{2}''$ | $1\frac{5}{8}''$ |
| Distance from center top opening of elbows to bottom of elbows..... | $1\frac{3}{8}''$ | $1\frac{7}{8}''$ | 2" | $2\frac{1}{2}''$ |
| List prices..... | 4.25 | 5.40 | 5.80 | 7.95 |

The Valve provides an interchangeable flow and return connection at one end only of the hot water radiator, and thus wonderfully simplifies water heating outfits. Its use saves fitter's labor, elbow, pipe and fittings otherwise necessary in making connection to return end of the radiator. The use of the Unique Valve also saves the cutting of joists, and extra cutting and boring of floors so objectionable to architects and owners. This Valve permits location of radiators in restricted floor space, where it could not go if connected at both ends.

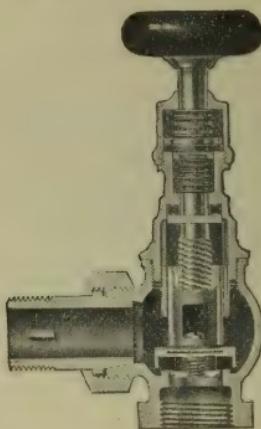
One-sixth of a turn of the handle fully opens or closes the Valve. When the gates are open, all the water is forced to circulate through the radiator. When the gates are closed, the radiator is shut off and the water flows through a by-pass in the Valve body, the full area of the pipes. Any radiator may therefore be shut off without preventing a constant circulation throughout the entire system.

As there is only one connection to make when this Valve is used, measurements and "roughing-in" work can be done with absolute accuracy. If necessary at any time to alter size of the radiator, no repiping is required, no new holes bored, no floors torn up.

The Unique Valve is made of best materials; all nuts and other parts subject to strain are extra heavy. Both elbows are adjustable so that connections to risers or stubs can be run in any desired direction. A diaphragm extending into the Radiator wholly across the waterway of the first section forces all the water up through the top connections, downward through the other sections, insuring freedom from counter currents and increasing the rapidity of circulation. Thus radiators yield their highest percentage of efficiency when Unique Valves are used. Send for special circular containing full description and interior views.

ALLEN PACKLESS RADIATOR VALVES
Quick Opening Ball Bearing
WITH COMPOSITION DISC

Made in
Angle Pattern
as illustrated



B3923

Also
Corner Pattern
Right or Left

| | | | | | | | |
|------------------------------------|--------|---------------|---------------|------|----------------|----------------|-------|
| Size..... | inches | $\frac{1}{4}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
| Rough Body. Plated all over...each | | 3.15 | 3.90 | 4.70 | 6.25 | 8.15 | 13.00 |

CORNER VALVE, OFFSET PATTERN

| | | | | | | | |
|-----------------------------------|--------|---------------|---------------|------|----------------|----------------|-------|
| Size..... | inches | $\frac{1}{2}$ | $\frac{3}{4}$ | 1 | $1\frac{1}{4}$ | $1\frac{1}{2}$ | 2 |
| Rough Body, Plated all over..each | | 3.45 | 4.25 | 5.15 | 6.95 | 8.95 | 14.25 |

Special descriptive circular furnished on application.

WOOD WHEELS

No. 1 KEY

No. 2 KEYS

For $\frac{3}{4}$ -in. to 2-in. Valve



B3925



B3926



B3927

Wheels only, each.... .04 Rough, each..... 18 Rough, each..... 50
Plates " pair..... 16 Nickeled, each..... 25 Nickled, each..... 70
Screws " each..... .04

When ordering **Wheels** or **Plates**, state name of maker of valve if possible, size and style of valve, diameter of plate and size and shape of hole in plate, and dimensions and number of threads to inch on screws. It is best to furnish samples if possible.

COMPRESSION AIR VALVES

Nickel Plated

WITH WOOD WHEEL

WITH LOOSE KEYS



B3930

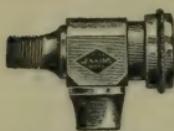
~~5555~~ $\frac{1}{4}$ -inch Valve, each..... .25



B3931

~~15531~~
1/8-inch Valve, each..... .25
Extra Key, each 8

PLAIN VALVE



B3933

Per dozen, \$7.50.

DRIP CUP



B3934

Per dozen, \$2.00.

**JENKINS BROS.
AUTOMATIC AIR VALVES**

Nickel Plated

| | | |
|--|-------|-------|
| Valves with $\frac{1}{8}$ inch Union on Outlet | dozen | 9.50 |
| " " $\frac{1}{4}$ " " " " | " | 10.00 |

No. 1



B3935

Each, \$1.35.

With Heat Controller, special.

No. 2



B3936

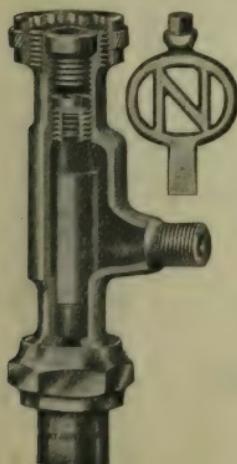
Each, \$1.25.

No. 5



B3937

Each, \$1.50.



**NATIONAL-PAUL
AUTOMATIC AIR VALVES**

B3938

Each, \$1.25.

PERFECTED DUPLEX RADIATOR AIR VALVES

No. 6



B3940

Each, \$2.00.

No. 7, VACUUM



B3941

Each, \$2.00.

WITH FOUR-WAY DRAIN

No. 6
Improved

B3942

Each, \$2.00.

No. 7
Improved

B3943

Each, \$3.00.

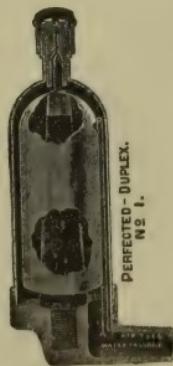
Nos. 7 and 7 Improved have Heat Controller. No. 6 Improved and No. 7 Improved have 4-way drain attachment.

Monash-Paul
Automatic Air
Valve

B3948

Each, \$2.00.

No. 1



B3944

Each, \$1.50.

No. 2
With Heat
Controller

B3945

Each, \$2.00.

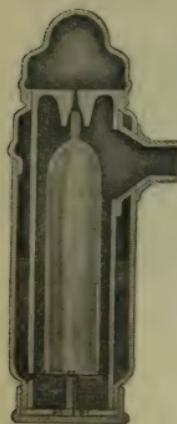
No. 3
For
Indirects

B3946

Each, \$1.50.

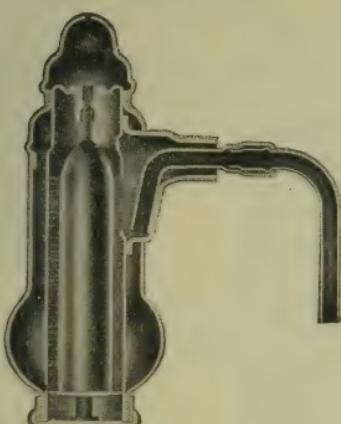
NORWALL AUTOMATIC AIR VALVES

Regular



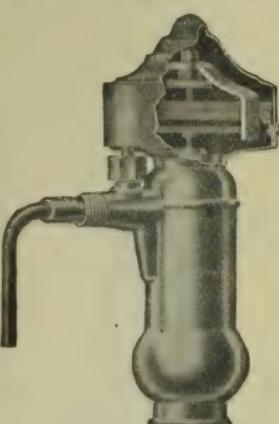
B3950

With Syphon



B3951

Vacuum with Syphon



B3952

Price each, as
illustrated.....

1.30

Price each, as
Illustrated.....

1.70

With Drip Pipe
attachment.....

1.60

With Drip Pipe
attachment.....

2.00

Price each, as
illustrated..... 4.00Can be furnished without
syphon attachment if
desired.**THE "NORWALL" HOT WATER AIR VALVE**

B 3954

Similar in design to B3950, except has thumb screw on top by which valve can be closed if desired. Price each 1.80

**MARSH-PAUL AUTOMATIC
AIR VALVE**

B3955

Each 1.25

BECKHAM DAMPER REGULATOR

B3966

For automatically regulating the temperature of the house by controlling the dampers of Hot Water or Steam Boiler or Hot Air Furnace.

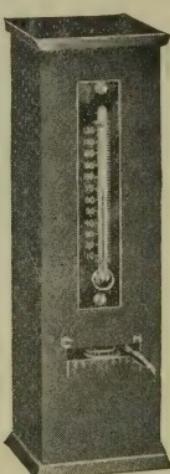
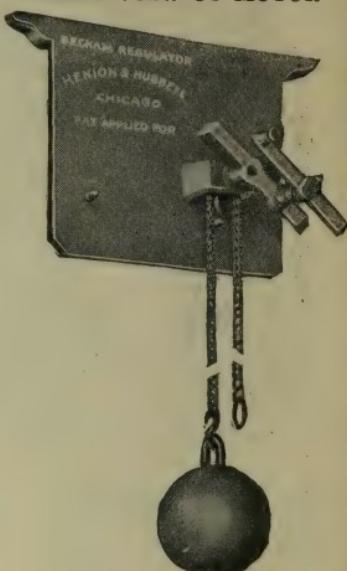
THERMOSTATS

Style A

Open Type

Style B

Enclosed Type

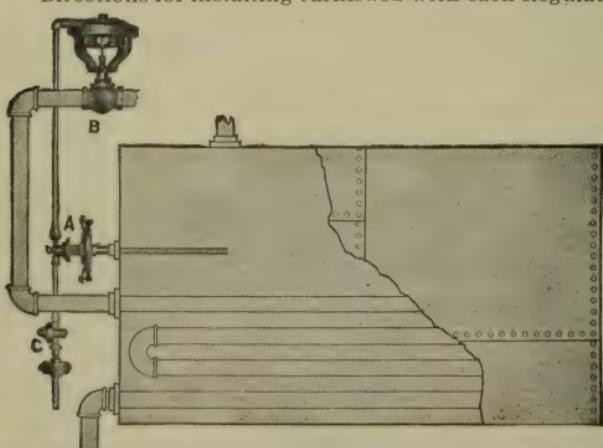
**FRONT VIEW OF MOTOR**

Price of outfit with Style A Thermostat..... \$25.00
Price of outfit with Style B Thermostat 29.00

If with Time Switch and Clock attachment, add 8.00
With the time attachment the motor can be set to operate at any stated time of day or night.

The regular outfit consists of Motor, Thermostat, 36 ft. of damper chain and two pulleys. Batteries and wires can be obtained from any electrician.

Directions for installing furnished with each Regulator.

**POWERS NO. 9
TANK
REGULATOR**

B3967

Regulates temperature of water in a steam-heated tank by automatically controlling flow of steam.

This regulator is constructed to operate at a temperature of 180 degrees Fahr. unless otherwise specified. It requires a $\frac{3}{4}$ -inch tapping in the tank, and must be installed substantially as shown in the cut. Furnished complete with diaphragm steam valve.

| Size..... | Inches | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/4 | 3 | 4 | 5 | 6 |
|-----------------|--------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| Price..... each | | 70.00 | 75.00 | 80.00 | 90.00 | 95.00 | 100.00 | 120.00 | 150.00 | 175.00 |

Operates at 180 degrees unless otherwise ordered.

THE POWERS REGULATOR

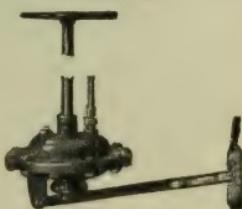
For House Heating Boilers and Furnaces



B3968

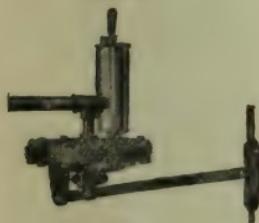
The Thermostat, centrally located in the living rooms, controls, through the diaphragm motor shown below, the drafts of the heater. Maintains a uniform temperature, and saves fuel.

No. 2



B3969

No. 3

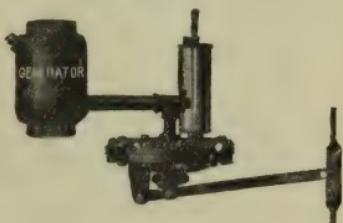


B3970

Diaphragm Motor of No. 3 Regulator for low pressure steam heater. Regulates fire from room temperature, also limits steam pressure.

Price complete, with Thermostat 45.00

No. 4



B3971

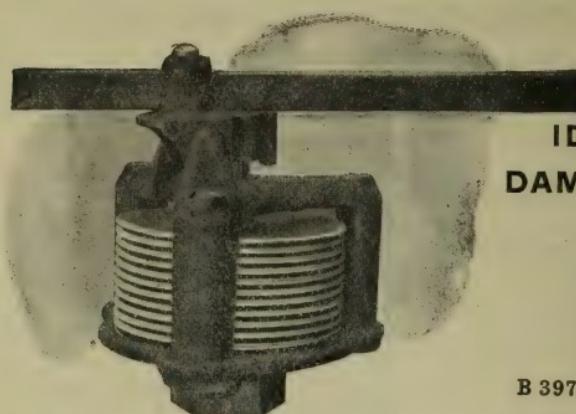


Check Damper should always be used on smoke pipe; greatly increases the efficiency of Regulator.

All sizes, 6 inch to 12 inch, price..... 1.25 to 1.75

B3972

Always give size of smoke pipe in ordering Regulator.



**IDEAL SYLPHON
DAMPER REGULATOR
NO. 22**

For Steam Boilers

B 3971½. Price each 20 00

(Protected by American and Foreign Patents. U. S. Patents June 2, 1903; June 16, 1903; May 24, 1904, and other applications pending.)

It is composed entirely of metal; is frictionless, is sensitive to the last degree; is positive and invariable in its action, and will not deteriorate with age.

It works just below atmospheric pressure, closing the dampers, if desired, before one ounce of steam pressure is generated. By shifting the counterpoise weight one can change its application from below atmospheric pressure to any pressure desired and maintain good draft control.

The regulating device is made upon the bellows plan and is formed of two brass discs with accordion sides, made of steam brass of the best quality.

The bellows is fed by a 1-inch opening in the bottom plate $5\frac{1}{4}$ inches in diameter.

IDEAL SYLPHON REGULATORS, NOS. 42, 43, 44

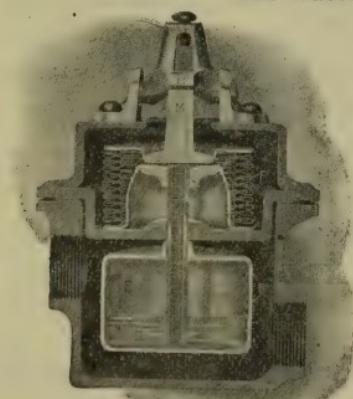
For Water Boilers and Tank Heaters

B 3972½. Price each 25.00

(Protected by American and Foreign Patents. U. S. Patents June 2, 1903; June 16, 1903; May 24, 1904, and other applications pending.)

These Regulators contain no perishable diaphragm, piston cylinder, packing valves or sliding joints. They are absolutely self-contained and require no auxiliary power, such as electricity or compressed air, to aid their operation. They are constructed entirely of metal and therefore never require repacking or new diaphragms as in the case of ordinary regulators.

The counterpoise weight may be set to accurately maintain the degree of water temperature desired. It is a simple, durable and reliable draft Regulator which will minutely adjust the dampers of a boiler at the slightest variation of temperature in the water.



NOTE.—When the flow main from the Water Boiler is larger than $1\frac{1}{4}$ inch, the Regulator is installed by connecting it between the flow and return mains with $1\frac{1}{4}$ -inch pipings. When the flow main is $1\frac{1}{4}$ inch or less (frequently the case with Tank Heaters), the Regulator is simply connected direct to the flow pipe.

Regulators Nos. 42, 43 and 44 are all similar in construction, the only change being in the chemicals (for liquid D in cylinder C) necessary to regulate the Heater in accordance with the variations of temperature, running from 120° to 240° .

| | | |
|--------|---|--------------------------------|
| No. 42 | Regulator, for water temperatures running | 120° to 180° |
| No. 43 | " " " | 160° to 220° |
| No. 44 | " " " | 190° to 240° |

The number of each Regulator is cast in raised figures on the shell.

Height 7 inches; diameter, 5 inches; weight, complete with lever and counterpoises, 28 pounds; shipping weight, boxed, 35 pounds. The Regulator is furnished complete, with 12 feet of plumber's chain and 4 S hooks.

**LOW PRESSURE DAMPER
REGULATOR**

**AUTOMATIC
WATER FEEDER**

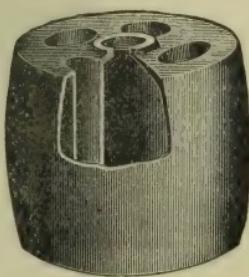
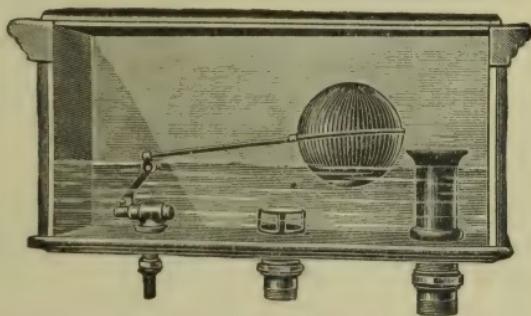
AUXILIARY WATER HEATER

B3975

Price, each, \$10.00

For use in the firepot of Hot Air Furnaces or Stoves.
Width, 10 $\frac{1}{4}$ inches; height, 8 $\frac{1}{4}$ inches. Tapped top and bottom for 1 $\frac{1}{2}$ inch pipe. Capacity, 140 square feet of direct radiation, about 170 gallons tank capacity.

GALVANIZED

**EXPANSION
TANKS**

WOOD, AUTOMATIC

GALVANIZED EXPANSION TANKS — Less Gauge

| Capacity | gallons | 5 $\frac{1}{2}$ | 8 | 10 | 12 | 15 | 18 | 20 | 24 |
|------------------------|-----------|-----------------|-------|-------|-------|-------|-------|-------|-------|
| Price (less Gauge) | each | 6.50 | 7.50 | 8.00 | 8.50 | 9.00 | 9.50 | 12.50 | 13.00 |
| Diameter | inches | 9 | 10 | 12 | 12 | 12 | 12 | 14 | 14 |
| Height | " | 20 | 20 | 20 | 24 | 30 | 36 | 30 | 36 |
| Suitable for Radiation | .sq. feet | 150 | 250 | 350 | 450 | 550 | 650 | 700 | 850 |
| Capacity | ga'lons | 26 | 32 | 42 | 66 | 82 | 100 | 120 | ..... |
| Price | each | 14.00 | 15.00 | 16.50 | 31.00 | 37.00 | 51.00 | 58.00 | ..... |
| Diameter | inches | 16 | 16 | 16 | 18 | 20 | 22 | 24 | ..... |
| Height | " | 30 | 36 | 48 | 60 | 60 | 60 | 60 | ..... |
| Suitable for Radiation | .sq. feet | 900 | 1,250 | 1,750 | 2,750 | 4,500 | 6,000 | 7,500 | ..... |

Water Gauge is extra, \$3.00.

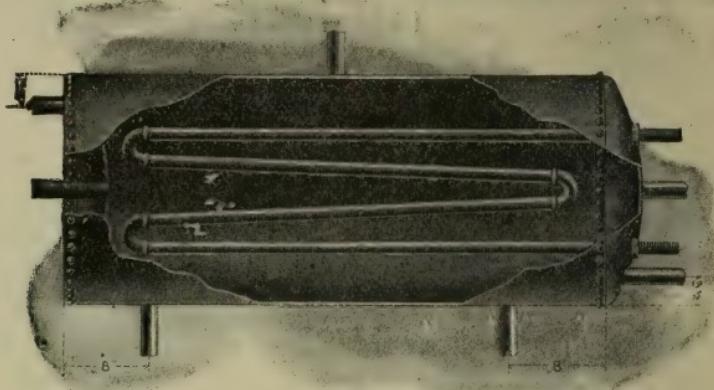
WOOD, AUTOMATIC EXPANSION TANKS

| | | |
|--|------|------|
| Price, Beaded; Plain Oak Varnished, with couplings..... | each | 8.50 |
| " Rounded Corners; Plain Oak Varnished, with couplings | " | 9.00 |

Walnut or Quarter Sawed Oak extra, \$1.25.

STEEL STORAGE TANKS

With or Without Coil



B3978

Showing location of Tank tappings, vertical or horizontal.
Coil openings vary according to size and shape of coil.

| Capacity Gallons | Diameter, Inches | Length, Feet | Approximate Weight, Pounds | Prices of Tanks Only | | Size of Coil | Coils Built in Tanks | | |
|---------------------|------------------|--------------|----------------------------------|-------------------------|------------|----------------|----------------------|------------------------------|---------------------|
| | | | | Plain | Galvanized | | Price Plain Coil | Prices Galvanized Coil | Price Brass Coil |
| 66 | 18 | 5 | 220 | \$ 48.00 | \$ 60.00 | 4—Pipes 1" | \$ 11.00 | \$ 13.00 | \$ 30.00 |
| 85 | 20 | 5 | 250 | 50.00 | 63.00 | 4—Pipes 1" | 11.00 | 13.00 | 30.00 |
| 100 | 22 | 5 | 280 | 52.00 | 67.00 | 4—Pipes 1" | 11.00 | 13.00 | 30.00 |
| 120 | 24 | 5 | 320 | 55.00 | 72.00 | 4—Pipes 1 1/4" | 14.00 | 16.00 | 40.00 |
| 145 | 24 | 6 | 360 | 58.00 | 78.00 | 4—Pipes 1 1/4" | 15.00 | 17.00 | 45.00 |
| 170 | 24 | 7 | 400 | 61.00 | 83.00 | 4—Pipes 1 1/4" | 16.00 | 18.00 | 40.00 |
| 180 | 30 | 5 | 480 | 64.00 | 90.00 | 4—Pipes 1 1/4" | 14.00 | 16.00 | 40.00 |
| 215 | 30 | 6 | 540 | 70.00 | 98.00 | 4—Pipes 1 1/4" | 15.00 | 17.00 | 55.00 |
| 250 | 30 | 7 | 590 | 75.00 | 105.00 | 4—Pipes 1 1/4" | 16.00 | 18.00 | 50.00 |
| 290 | 30 | 8 | 640 | 80.00 | 112.00 | 4—Pipes 1 1/4" | 17.00 | 19.00 | 55.00 |
| 315 | 36 | 6 | 780 | 92.00 | 126.00 | 4—Pipes 1 1/2" | 18.00 | 21.00 | 56.00 |
| 365 | 36 | 7 | 810 | 102.00 | 136.00 | 4—Pipes 1 1/2" | 19.00 | 22.00 | 62.00 |
| 420 | 36 | 8 | 880 | 112.00 | 149.00 | 4—Pipes 1 1/2" | 20.00 | 23.00 | 68.00 |
| 525 | 36 | 10 | 980 | 120.00 | 168.00 | 4—Pipes 1 1/2" | 22.00 | 25.00 | 80.00 |
| 430 | 42 | 6 | 1150 | 116.00 | ..... | 4—Pipes 1 1/2" | 18.00 | 21.00 | 56.00 |
| 575 | 42 | 8 | 1400 | 130.00 | ..... | 4—Pipes 1 1/2" | 21.00 | 24.00 | 68.00 |
| 720 | 42 | 10 | 1650 | 146.00 | ..... | 4—Pipes 1 1/2" | 24.00 | 27.00 | 80.00 |
| 865 | 42 | 12 | 1950 | 167.00 | ..... | 4—Pipes 1 1/2" | 27.00 | 30.00 | 92.00 |
| 1000 | 42 | 14 | 2300 | 188.00 | ..... | 4—Pipes 1 1/2" | 30.00 | 33.00 | 104.00 |
| 1135 | 42 | 16 | 2650 | 209.00 | ..... | 4—Pipes 1 1/2" | 33.00 | 36.00 | 116.00 |

Subject to discounts.

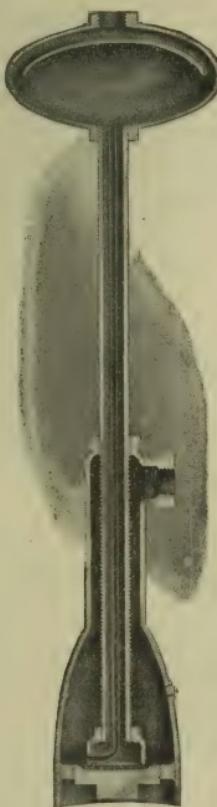
Manhole in head or shell \$7.50 extra, net.

Handhole in head or shell \$3.50 extra, net.

In ordering, state whether vertical or horizontal tanks are wanted. Unless otherwise ordered, tanks without coils, manholes or handholes will be shipped, and tappings located as illustrated above. Tanks of 180 gallons capacity and under will have openings tapped for 1 1/2 inch pipe; tanks of larger capacity will have openings tapped for 2 inch pipe; no extra charge for more or larger openings than shown in cut.

HONEYWELL HEAT GENERATORS

For Water Piping



B 3980

Prices, Each

| | |
|-----------------------------------|---------|
| Style 1 for 1500 square feet..... | \$25.00 |
| Style 2 " 2500 " " | 35.00 |
| Style 3 " 3500 " " | 50.00 |

These Generators are designed to meet the demand for a device to quicken the circulation in hot water heating jobs. When connected to the piping of an ordinary gravity plant this Generator seals the circuit and permits the generation of a slight pressure up to ten pounds, at which point it relieves itself through the operation of a mercury seal, eliminating the element of danger. The tendencies of this slight pressure are: First, to increase the circulation; second, to widen the range of temperatures to a point equal to that of steam; third, to accomplish an economy in fuel.

The pressure created by this Generator is calculated to force the water through any part of a defective piping system where the circulation is sluggish under ordinary gravity conditions. It is simple to install and is applicable to both old and new heating plants.

Sectional outline view herewith shows mercury seal, connections to system, equalizing pipe and deflecting plate.

Approximate weights: style 1, 35 lbs.; style 2, 45 lbs.; style 3, 55 lbs.

THE "ACME" RADIATOR SHIELD

B3987

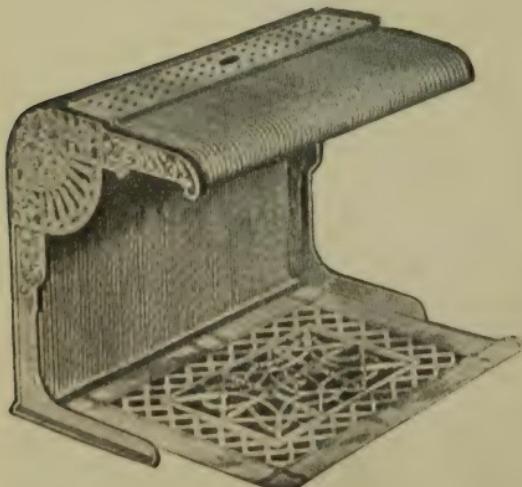
Price per inch of length.

Plain, per inch.20

Bronzed, per inch..... .25

Directions for Ordering

When ordering Acme Shields, state whether for Steam or Water Radiator. State the pattern of radiator, whether One, Two, Three, or Four Column, the name of the radiator, and how many sections in the radiator. To avoid mistakes it is advisable to state length of radiator over all from end to end and the width of the sections from front to back at the top. State distance from finished wall (not base-board) to radiator. If extension to floor is wanted state height of radiator.

STYLE 2**ACME
REGISTER SHIELD**

B3989

Style No. 2 with Water Pan or Air Moistener on top as illustrated.

Style No. 1 is without the Air Moistener.

Prices on application.

State dimensions and finish wanted.

RADIATOR BRONZE AND PAINTS



B3990



B3991

Prices on application.



B3992

BRONZE

Aluminum, Pale Gold, Rich Gold, Copper, Olive Green, Apple Green, Marine Blue, Sky Blue, Fire (Red), Lemon. All in one pound cans.

Bronzing Liquid in one gallon cans.

Maroon Japan in one-half gallon cans.

RADIATOR ENAMELS

Put up in One Gallon, Half Gallon, Quart, and Pint Cans.

Colors

| | | | | |
|------------|------------------|--------------|---------------|------------|
| Alabaster | Ebony (or black) | Lilac | Turquoise | Old Ivory |
| Azure Blue | Apple Green | Cream | Forget-Me-Not | Lemon |
| Light Pink | Gobelins | Terra Cotta | Palm Green | Buff |
| Oak Brown | Silver Gray | Nile Green | Crimson | Lavender |
| Light Drab | Blue Tint | Bronze Green | Scarlet | Peach Blow |
| | | Sea Green | Gray Tint | |

FITCH BRUSHES



B3993

We are prepared to furnish best grade Fitch Brushes in any size desired.

Note: Never put a Fitch brush in water, as this causes the block or handle to swell and split. Brushes may be kept in best of condition by immersing in bronzing liquid, turpentine, enamels, etc.

LONG HANDLE RADIATOR BRUSHES



B3995

The brush illustrated above is specially designed for use on radiators, the shape being such that it will pass between the sections, cleaning surfaces which could not otherwise be reached. These brushes are thoroughly well made, and very serviceable.

Price, each, 75c.

GREENHOUSE GOODS



B3997

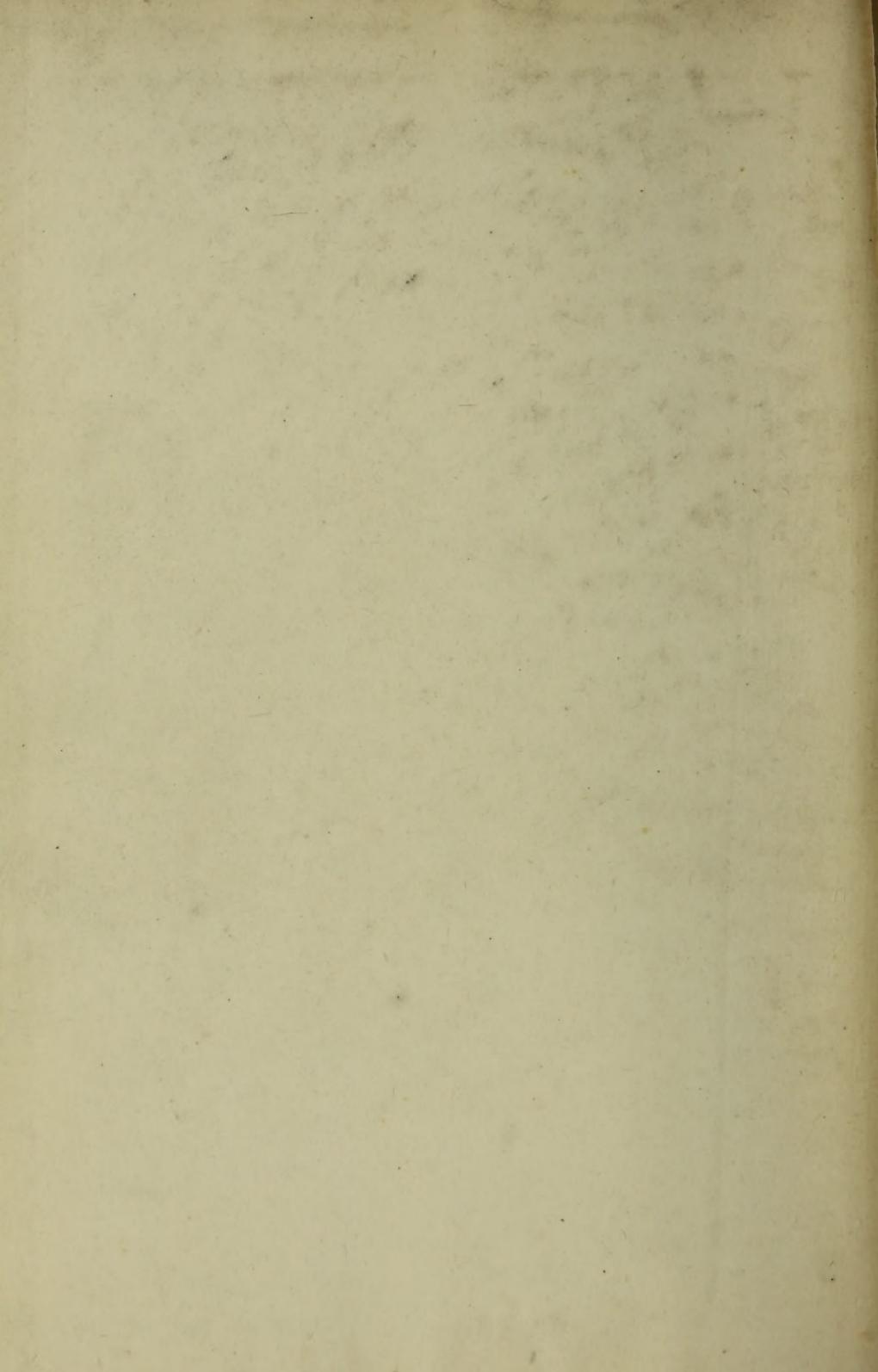
Illustration shows method of heating greenhouses with cast-iron boiler. A wrought shell heater, such as the Wilks, may be used for the same purpose. We are also prepared to furnish Wrought and Steel Pipe Fittings and Valves, also Cast-iron Pipe and Fittings with Hub Joints for greenhouse purposes. Write for prices, giving us a list of what material is needed.

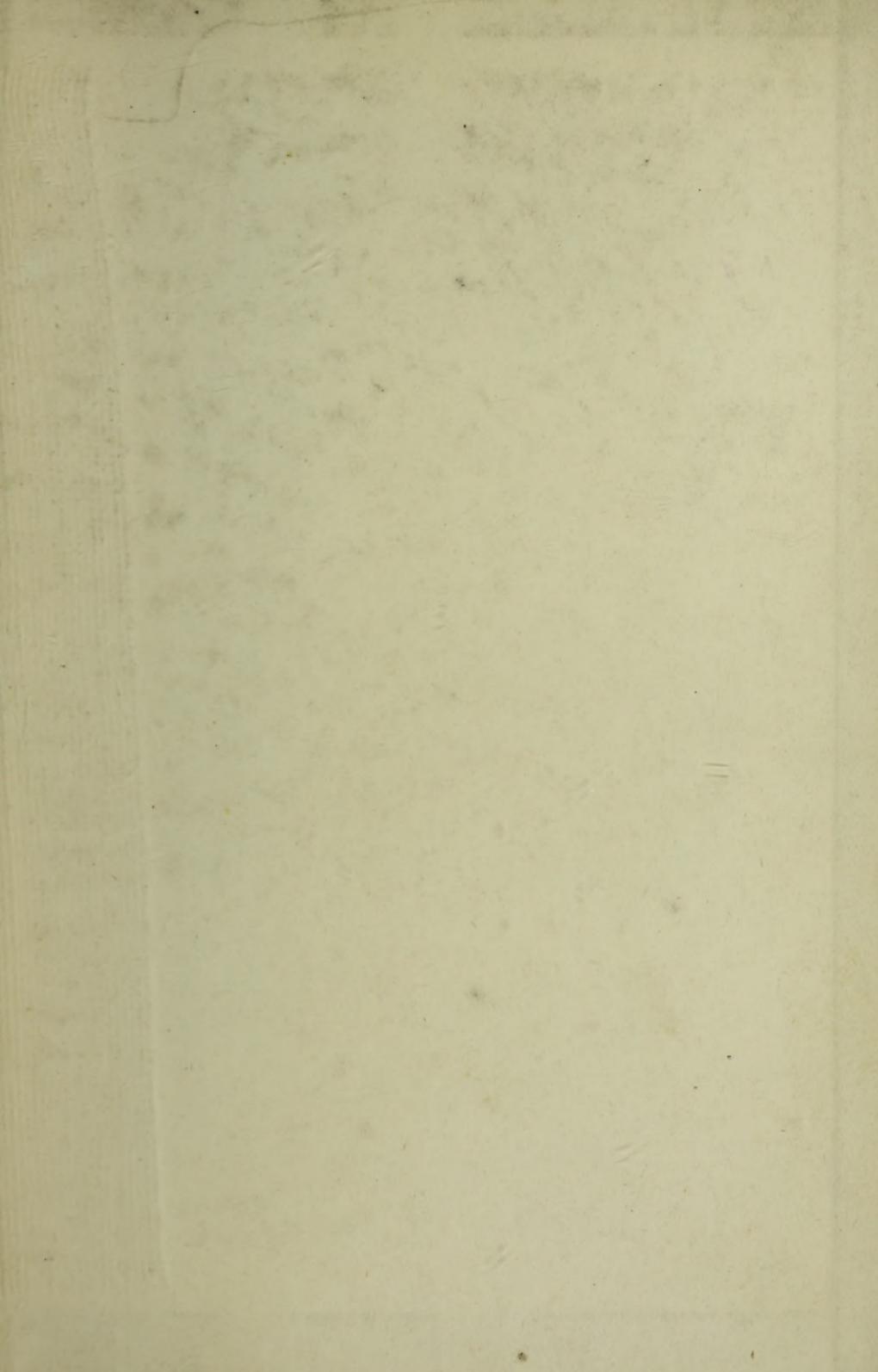

**MASON'S
RADIATOR
TRUCK**

B3999

Price each.....\$18.00

It is the greatest labor-saving device ever invented for the handling of Radiators. It can also be used to an excellent advantage for moving Slate, Stone, Marble, Glass, etc., or anything that has to be carried on edge for safety, or to get through narrow passageways. Its construction is simple and it can be handled with the greatest ease. The wheels are extra large and have wide rubber tires. A boy can load and move a twenty-section radiator with it.





UNIVERSITY OF ILLINOIS-URBANA



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